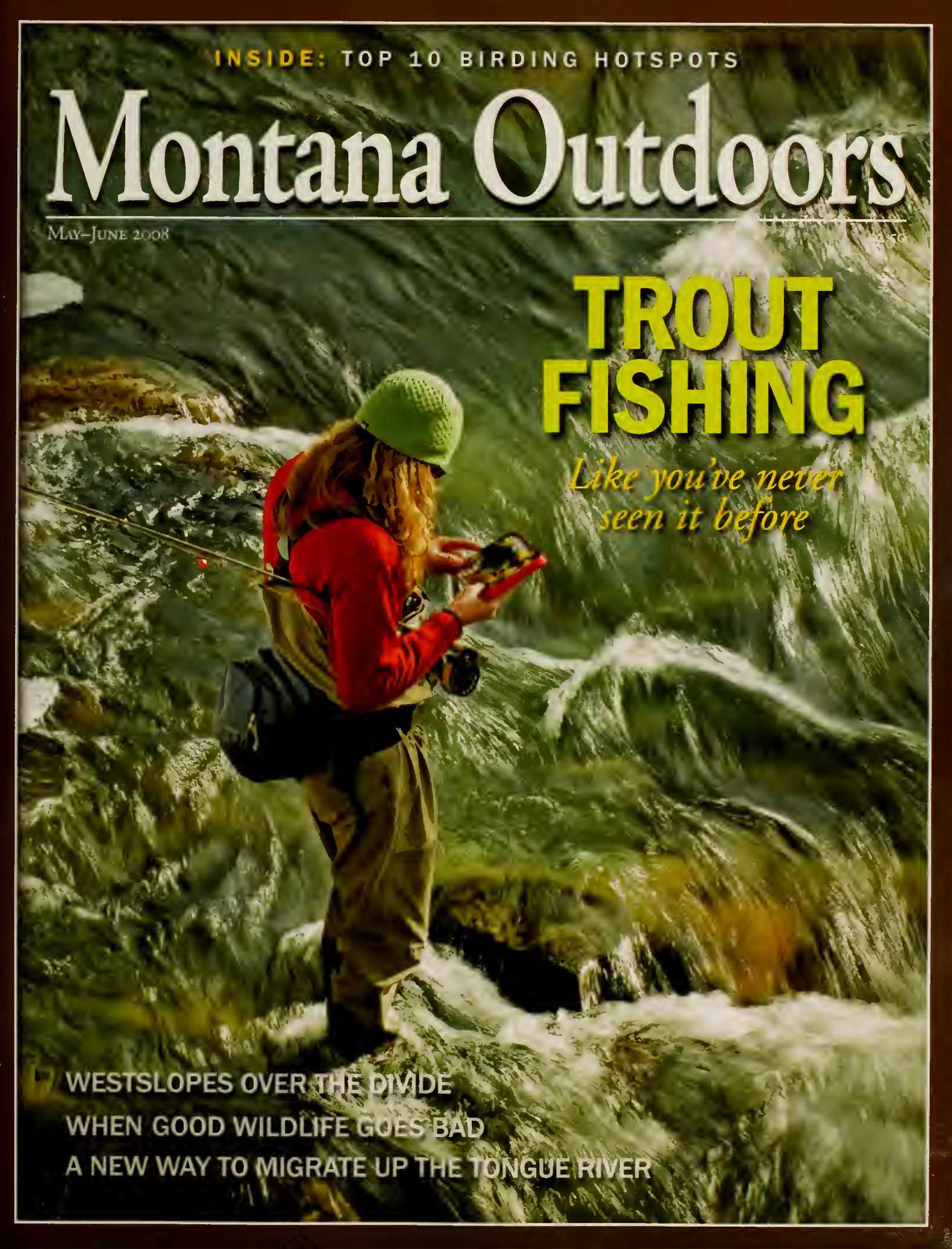
INSIDE: TOP 10 BIRDING HOTSPOTS
Montana Outdoors
May–June 2008
TROUT FISHING
Like you've never seen it before
WESTSLOPES OVER THE DIVIDE
WHEN GOOD WILDLIFE GOES BAD
A NEW WAY TO MIGRATE UP THE TONGUE RIVER

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Montana Outdoors

MAY–JUNE 2008

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OWL OUTPOST During some winters, snowy owls by the hundreds converge in the Mission Valley. For more great places to see Montana's bird life, see story on page 12. Photo by Donald M. Jones.

FRONT COVER An angler selects a fly on the Gallatin River near Big Sky. Photo by Brian and Jenny Grossenbacher.

Leap off heights!

I have been visiting Montana every summer for the past 22 years, and thus greatly enjoy each issue of your magazine as it arrives here in Pennsylvania. As a retired science educator and a longtime angler and hunter, I was especially interested in Brian Maffly's "Playing It Too Safe" article in the March–April issue. May I offer the following quote?

Boys [should be] inured from childhood to trifling risks and slight dangers of every possible description, such as tumbling into ponds and off of trees, etc., in order to strengthen their nervous system.... They ought to practice leaping off heights into deep water. They ought never to hesitate to cross a stream over a narrow unsafe plank for fear of a dunking. They ought never to decline to climb up a tree to pull fruit merely because there is a possibility of their falling off and breaking their necks. I firmly believe that boys were intended to encounter all kinds of risks, in order to prepare them to meet and grapple with risks and dangers incident to a man's career with cool, cautious self-possession....

That was written 150 years ago in Scotland by Robert Michael Ballantyne, a prolific writer of adventure books for boys in Great Britain in the 1800s. His writings were credited with encouraging many youth to

come to North America in search of wilderness adventure. Seems like the problem has been around for some time.

Robert L. Ballantyne
Gilbertsville, Pennsylvania

Utah fan

Your magazine is a work of art, and the wildlife articles are definitely "upper drawer."

Jarv Facer
Willard, UT

Scary thought

I am writing about the present debate of hunter rights versus landowner rights. I believe the biggest issue is not that landowners are preventing wildlife management, but that landowners are restricting access to open country that hunters want to use for recreation. Many of those hunters must also be landowners, as we are, but in a smaller sense. Are they opening a Pandora's box by singling out certain private citizens to lose their property rights but claiming that *their* property rights are safe? The present problem of hunter rights versus private land access versus wildlife management has been created by hunters who hunt irresponsibly and vindictively. We stopped allowing public hunting years ago because of some vindictive and irresponsible hunters. One fall two heifers were shot and killed. Various years we picked up trash dumped on our place by hunters. We were also upset by their vehicle tracks over our range. There are not as many landowners as there are hunters who want on our property. We love our home, and the thought that we may be forced by the threat of fines or time in jail to put up with irresponsible hunters is very scary and angering and carries with it a great feeling of unfairness.

Lynne Haldemann
Chinook

Hagener on target

Director Jeff Hagener's column "A sensible way to solve the bridge access and fencing problems" (March–April) was right on target. His proposal, and a similar bill that failed in the state House last year, is a reasonable and commonsense compromise. It would allow Montana's ranchers to protect their stock while providing public access to our public rivers and streams. As Mr. Hagener points out, it is illegal for landowners to attach fences to bridge abutments on county roads and highways. Yet some have done exactly this—some to protect their livestock, but others simply to bar public access illegally. A reasonable compromise is to pass legislation to permit tying stock fences to bridges while providing for public access by means of gates, stiles, angler's ladders, or other devices. This would prevent stock from escaping, while allowing for public access. Those who oppose this reasonable compromise may be motivated less by a legitimate concern to protect their livestock and more by a desire to keep the public off what they incorrectly perceive as "their" property. Montana's rivers and streams belong to the public, and the public's access must be protected and preserved. Along with Trout Unlimited and other groups, the Madison River Foundation is ready to work with our neighbors to help fund and construct angler accesses. At the same time, the legitimate rights of property owners must be respected. Anglers should be conscientious and remain below the normal high-water mark, close all gates behind them, and avoid littering or otherwise abusing private property.

Richard Lessner, Ph.D.
Executive Director, Madison River Foundation, Inc., Ennis

Stands out

I just read the piece on grizzlies in the latest issue of *Montana Outdoors* ("State of the Grizzly," March–April). Like the wolf article you did in 2006, this was a very good article that covered the full spectrum of the issue. *Montana Outdoors* stands out among state department magazines because it doesn't just act as a house organ for the agency's perspective. On controversial subjects like wolves, grizzlies and others, you provide many different perspectives.

George Wuerthner
Richmond, VT

TOM DICKSON

"At least I don't have limp, lifeless hair like some people."

Let's keep the Fort Peck Hatchery open year-round

Walleye production will remain its top priority, but the Fort Peck Hatchery could be doing much more for Montana anglers.

ERIC ENGBRETSEN

Imagine owning a factory you could only operate for a few months of the year. The factory makes great products, and people want more of them, but you lack the funding or support to run the facility more than part-time.

That's the situation Montana faces with the new Fort Peck Multi-Species Fish Hatchery. Built in 2006, the hatchery is a high-tech aquaculture facility with enormous capacity to produce fish for stocking in ponds, lakes, and reservoirs across Montana. Unfortunately, FWP has been forced to shut it down for much of each year.

The hatchery sits southeast of Glasgow on the banks of the Missouri River below Fort Peck Dam on 100 acres leased from the U.S. Army Corps of Engineers. The federal agency designed and built the facility, then transferred ownership to Montana. In 1999, the Montana Legislature authorized the sale of a $5 warmwater stamp to fund the yet-to-be-built hatchery's operations. Lawmakers restricted the facility to raising certain warmwater fish and Chinook salmon, but not trout. The stamp, required of anglers who pursue warmwater fish such as walleyes and smallmouth bass in certain Montana waters, is the only source of income to run the hatchery's daily operations. The stamp covers walleye production, which runs for four months each year. During the other eight months, the hatchery sits idle, except for some Chinook salmon production.

This department definitely wants Fort Peck to continue rearing walleyes, a species that is and will continue to be the hatchery's primary focus. But we don't think it makes sense to squander the opportunity afforded by such a top-notch facility to raise other species, such as trout, during the other months. Right now, we're raising trout at our Giant Springs and Lewistown hatcheries and then trucking those fish hundreds of miles for stocking in more than 100 fishing ponds and lakes in northeastern Montana. Not only is that a waste of time and gas, but by having to produce trout for the northeastern ponds, the other hatcheries don't have the capacity to produce trout for Canyon Ferry, Hauser, Holter, and other trout reservoirs elsewhere in Montana.

Another problem: Within a few years, FWP will run out of funds for even the Fort Peck Hatchery's walleye-rearing operations. Revenue from the warmwater stamp will fall short of operating expenses, requiring us to reduce the hatchery's production of warmwater fish.

Over the past year, FWP staff have been meeting with local advisory groups, legislators, angling clubs, and others to figure out how to fund the hatchery and keep it operating. We hope that trout and walleye fans alike will eventually agree that it doesn't make sense to shut down a state-of-the-art fish-producing facility and prevent it from benefiting as many anglers as possible.

—M. Jeff Hagener,
Director, Montana Fish, Wildlife & Parks

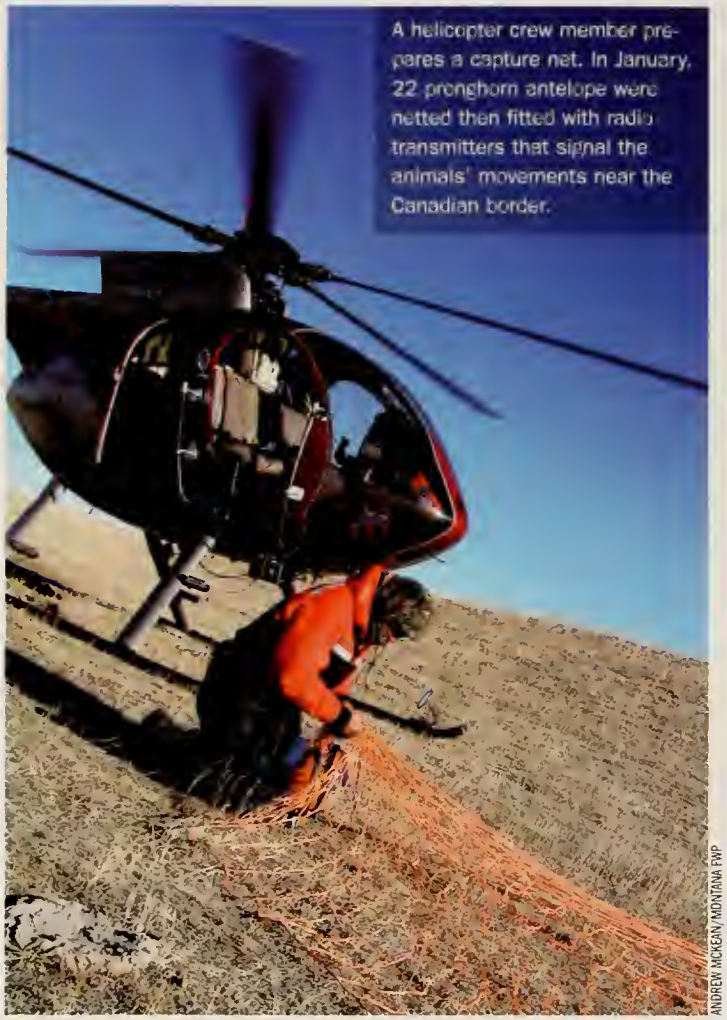
NATURAL WONDERS

ILLUSTRATION BY PETER GROSSHAUSER

Q. What's the best way to stay safe when hiking or camping in grizzly country?

A. Being outdoors in grizzly country is not inherently unsafe. Bear encounters are relatively rare, and they almost always result in grizzlies and humans parting ways without incident. According to bear experts, the five most important things to remember to avoid unwanted encounters or incidents: **1.** Avoid traveling alone. **2.** Make lots of noise while walking. **3.** Be extra cautious in areas where bears hang out, such as berry patches. **4.** Keep your camp clean and free of food odors. **5.** Hang food and trash at least 10 feet off the ground, at least 100 feet from your sleeping area.

And let's not forget rule #6: Never hike in a huckleberry suit.



A helicopter crew member prepares a capture net. In January, 22 pronghorn antelope were netted then fitted with radio transmitters that signal the animals' movements near the Canadian border.

ANDREW MCKEAN/MONTANA FWP

New pronghorn study to track movement into Canada

Will energy development in northeastern Montana harm pronghorn antelope populations?

Currently, no one is sure how proposed natural gas drilling could affect the fleet-footed prairie animals. As part of a new study, FWP biologists have begun tracking pronghorns to learn where the animals spend their summers and winters. They hope to better understand migration routes throughout the year—information that could help reduce harm to pronghorn populations by growing oil and gas development in the region.

In January, FWP captured 22 pronghorn does north of Malta and equipped them with collars that receive Global Positioning System (GPS) signals. A net-gunner sitting inside a highly maneuverable helicopter fired leg-ensnaring mesh at the running pronghorns below. The method is the safest and most humane way to capture pronghorns for collaring.

Biologists are now tracking the antelope across northern Montana and southern Canada. The collars will store GPS coordinates and are programmed to fall off after a year. Biologists will then collect the collars, download the coordinates into a computer, and build a map that shows each animal's movements.

FWP wildlife biologist Kelvin Johnson helped design the study as part of a team including biologists from the University of Calgary and the World Wildlife Fund. "It's a very habitat-oriented study, and the results could lead to better conservation management strategies across the landscape," he says.

Later this year, Johnson and his crew will collar additional pronghorns in northern Phillips County as well as in northern Valley County, which has similar habitat but little energy development potential. "We're interested in seeing if we can detect any differences in pronghorn antelope use between the two areas," Johnson says.

Great Falls man's boating accident story wins award

The National Safe Boating Council recently awarded a Montana man third place in the organization's 2007 "Be a Survivor!" essay contest. The contest invites boaters to submit personal testimonials on how a life jacket made a difference in their boating experience. Tyson Hajek of Great Falls told the story of how, while he was surfing waves in the Blackfoot River, his catamaran raft capsized and held him underwater until his life jacket buoyed him to the surface. He received a new life vest and a VHF hand-held radio as part of the award for his story (reprinted at right).

Liz Lodman, who coordinates the FWP Boating Safety Program, says Hajek's survival account may inspire more boaters to wear life vests. "We're excited to see Tyson's story get this type of exposure," she says. "The more people who read about how life jackets save lives in Montana, the better." Lodman adds that May 17–23 is National Safe Boating Week, when state and national agencies and organizations promote wearing life jackets and other ways to prevent boating accidents and injuries.

If you have had a harrowing boating accident and wore a life jacket that helped you survive, enter the contest by submitting an essay or video. Essays are limited to no more than 1,000 words and videos to two minutes. Mail to: Safe Boating Campaign, P.O. Box 509, Bristow, VA 20136, or check safeboatingcampaign.org for on-line entry procedures.

How I Survived the Blackfoot

By Tyson Hajek, Great Falls

Wearing a life jacket saved my life last spring. I was floating down the Blackfoot River and had just gone down the Roundup Bridge area, when I decided to surf some smaller rapids in my 6-foot catamaran-style raft. The current was strong and pushed me down the river. The Roundup Bridge rapids were peaking at 8 to 12 feet, and the rapids below those were up to 6 feet high. I had successfully surfed a number of rapids that day, but the catamaran was new and I wanted to test out its limitations. One rapid I was surfing was a little over 6 feet tall and had a good depression that I used to position my raft into the backwash. I was successfully surfing for several minutes when my right side was pulled down into the rapid while the left side was simultaneously pushed up into the backwash. Suddenly, I was upside down, sitting in the raft's seat with an oar in each hand. I let go of the oars and pushed myself out of the rowing

seat. Luckily, my life jacket forced my head toward the surface, where I breached under my raft. I sucked in a lungful of air then pushed myself back down and out from under the raft. I clung to my capsized vessel for several more minutes until another rafter helped me aboard his raft. He had seen me flip and said it had been more than a minute before my head came out of the water. The life jacket also worked well as an insulator for the remainder of my trip, perhaps saving me from hypothermia as well as drowning. If not for the life jacket, I am sure I would have fared much worse than I did.

Dream hunt lottery still open

Hunters hoping to win a trophy big game hunt in Montana will need to purchase their SuperTag license chances soon. The deadline for moose, bighorn sheep, and mountain goat is July 3. The deadline for deer, elk, pronghorn, mountain lion, and bison is July 31.

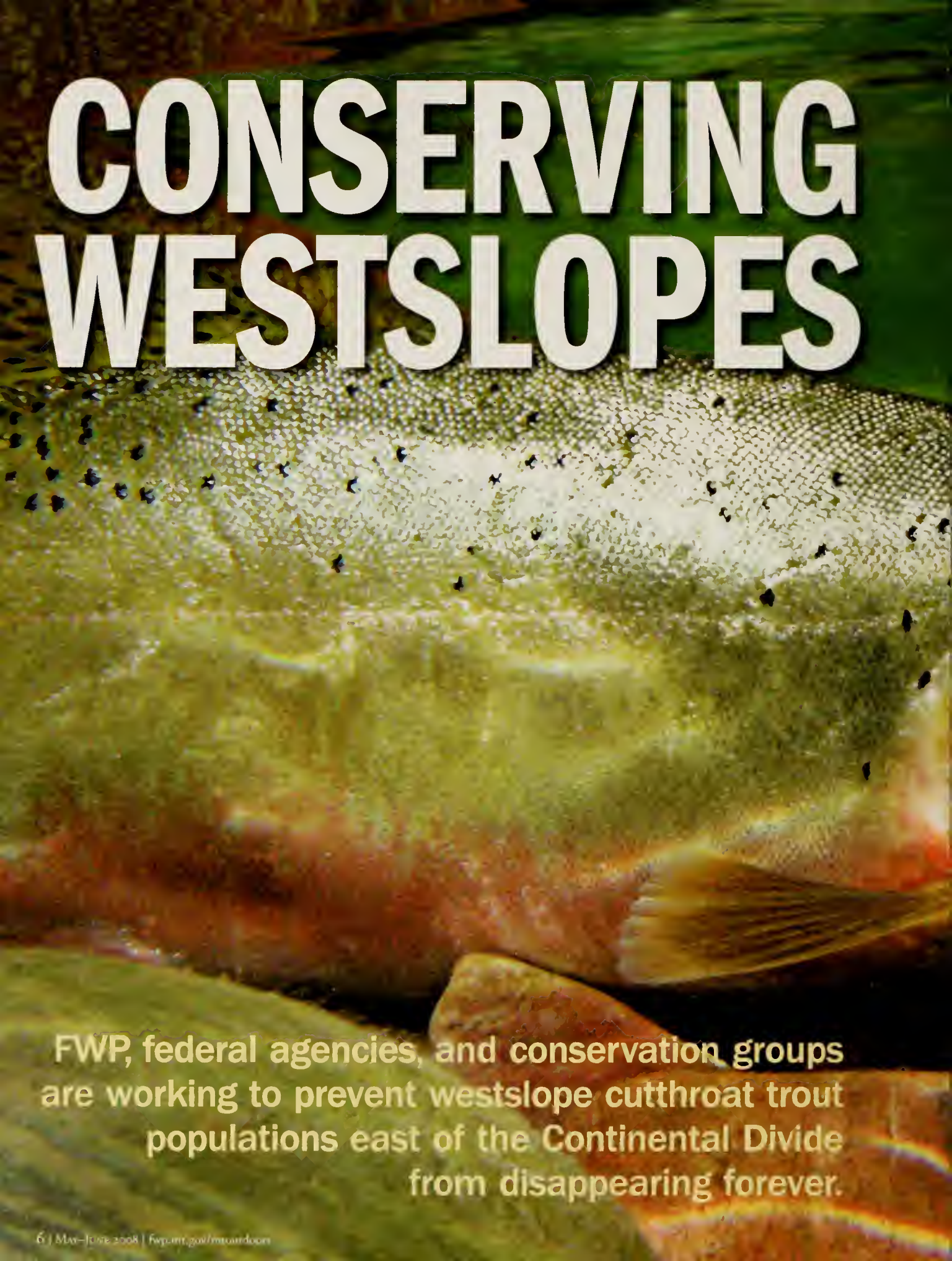
Montana awards one SuperTag for each big game species through a special lottery, initiated in 2006. Residents and nonresidents may buy unlimited SuperTag tickets for $5 each. Winners could hunt in any hunting district, including Montana's legendary trophy districts. Revenue from SuperTag sales helps enhance hunter access and boost FWP conservation efforts. SuperTag tickets are available at FWP offices, license providers, and online at fwp.mt.gov.

DONALD M. JONES

An expert kayaker prepares to descend Thompson Falls. State officials and boating safety experts urge all water recreationists to wear a life jacket to reduce the chances of drowning after a spill.

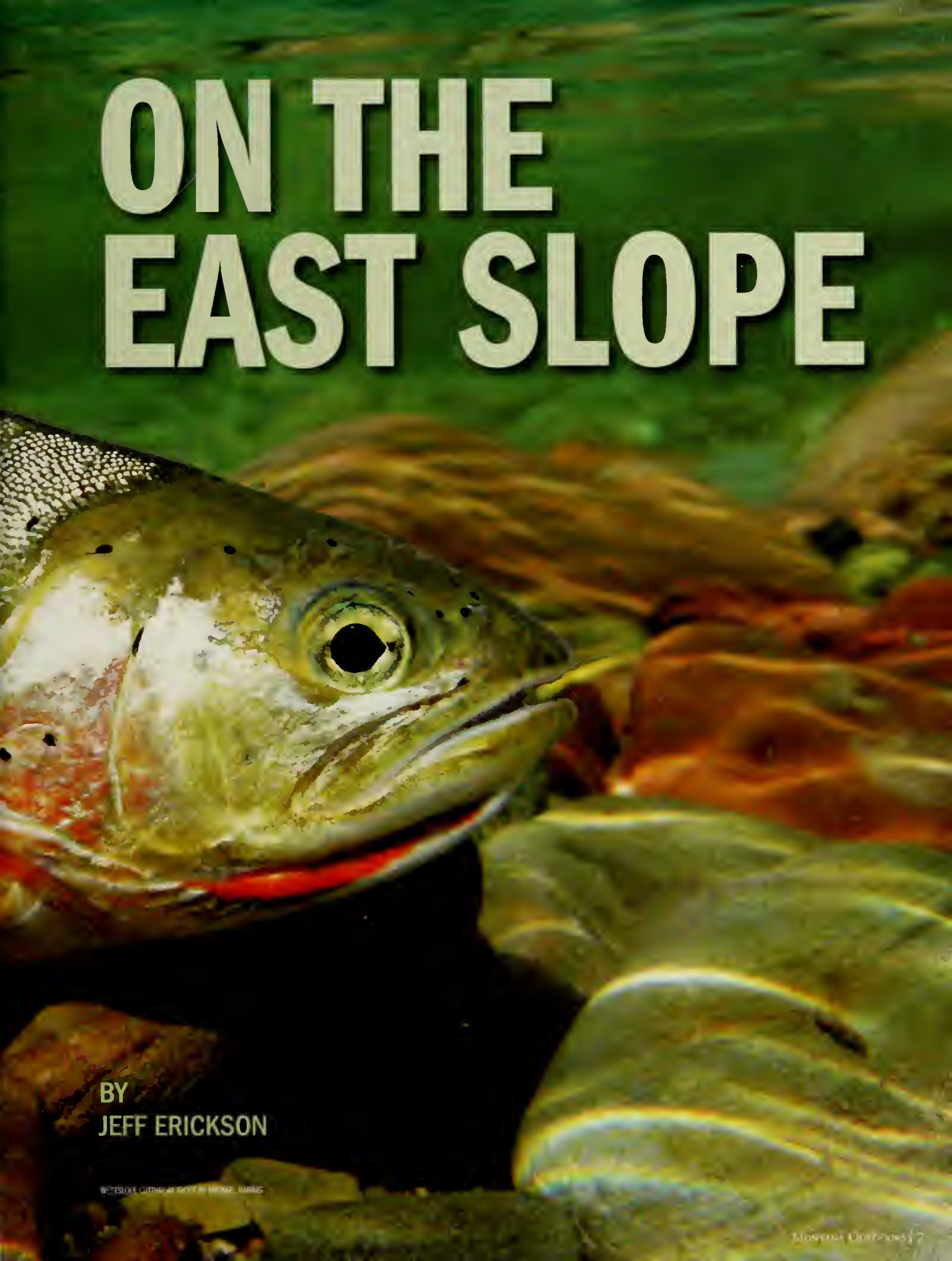
JENNIFER BOWMAN

CONSERVING WESTSLOPES



FWP, federal agencies, and conservation groups are working to prevent westslope cutthroat trout populations east of the Continental Divide from disappearing forever.

ON THE EAST SLOPE



BY
JEFF ERICKSON

WESTSLOPE CUTTHROAT TROUT BY MICHAEL HARRIS

The bright morning sun filtering through ponderosa pines sparkles off the riffles of Muskrat Creek as the stream twists down from the Elkhorn Mountains. Two Montana Fish, Wildlife & Parks fisheries biologists, Lee Nelson and Dave Moser, watch a survey crew work a creek segment with an electric probe, nets, and bucket. Each burst of electricity from the probe temporarily stuns trout, causing them to float to the surface. Crew members carefully net, count, and measure the fish before returning them to the stream.

As expected, the crew finds numerous westslope cutthroat. But along with the native species are several brook trout, an unwelcome non-native. For Nelson and Moser, who work exclusively on westslope cutthroat east of the Continental Divide, the presence of brookies means a management setback. For seven years, FWP crews had worked to eliminate brook trout from this 1.3-mile section of Muskrat Creek, about 30 miles south of Helena. Native east of the Mississippi River, brookies were stocked in the early 20th century throughout the West. Since then, the aggressive species has crowded out native cutthroat. On other cutthroat waters, rainbow and Yellowstone cutthroat trout hybridize with westslopes and dilute their genetic integrity. "For the most part, poor habitat isn't the main problem for westslopes in this area," says Moser. "It's exotics like brook and rainbow trout."

Most cutthroat restoration money and efforts by FWP, federal agencies, and cold-water conservation groups such as Trout Unlimited (TU) have gone to fisheries west of the Continental Divide. There the primary challenge is to maintain and restore healthy populations on rivers such as the Flathead and Clark Fork. Despite the species' misleading name, westslope cutthroat trout are also indigenous to the other side of the hill, and are also in peril. The challenge there is to keep a dwindling number of small mountain headwater populations, like the one in Muskrat Creek, from disappearing forever.

Jeff Erickson is a writer and photographer in Helena.

JEFF ERICKSON

DECLINING NUMBERS

The westslope, Montana's state fish, is one of two cutthroat subspecies (the other is the Yellowstone) native to the state. The first known written record dates to June 1805, when the Corps of Discovery reported catching and eating a dozen specimens below the Great Falls of the Missouri River. Today, the scientific name of this colorful native—*Oncorhynchus clarki lewisi*—bears the name of its discoverers. In northwestern Montana, westslopes thrived from the upper Bitterroot River north to Canada and northern Idaho. On the other side of the Rockies, the subspecies swam in the upper Missouri River and tributaries as far downstream as the White Cliffs area, where the water became too warm to support trout. The westslope cutthroat was also indigenous to pockets of central Montana east to the Snowy Mountains, near Lewistown. (The Yellowstone cutthroat trout subspecies historically occurred in the upper Yellowstone River drainage as far east as Miles City.)

The westslope's range in much of Montana began declining during the late 19th century. Native fish populations were harmed by the introduction of rainbow, brown, and brook trout, combined with fishery overharvest and the environmental effects of mining, logging, and agriculture. Over the past century, the distribution of pure-strain westslope cutthroat has dropped to less than 10 percent of the subspecies' original range.

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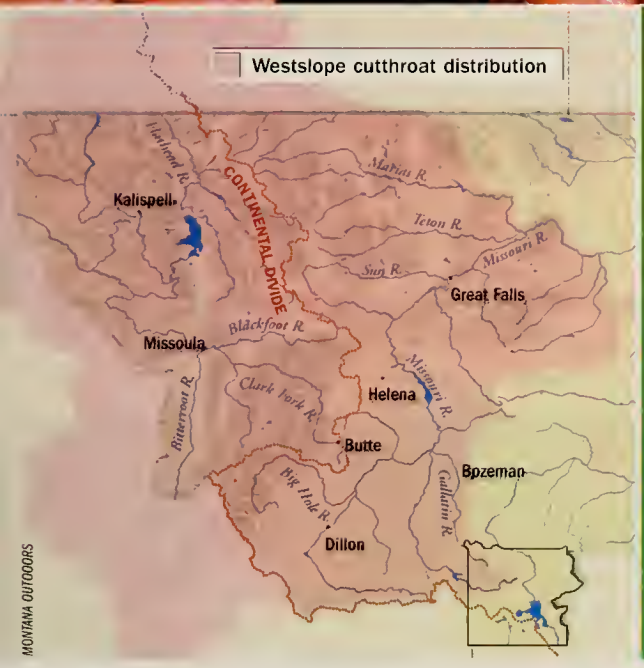


MONTANA OUTDOORS

SHOCKING RESULTS FWP crews surveying Muskrat Creek (far left) in 2007 for native westslope cutthroat (above) were surprised to find brook trout. Biologists thought they had previously eliminated the non-native species, which outcompetes cutthroat. Removing brookies is one way FWP, federal agencies, and conservation groups are protecting westslope cutthroat, which, despite their name, are also native east of the Continental Divide. Other activities include installing barrier dams to block non-natives.

FWP designated the fish as a "species of special concern" in 1972, and several years later conservation groups petitioned to have the fish listed as a federally threatened or endangered species. The U.S. Fish and Wildlife Service concluded that protection under the federal Endangered Species Act (ESA) was not warranted, though the agency could reconsider if populations drop too low. That possibility, along with wanting to prevent a native treasure from disappearing, prompted FWP, other public agencies, and private sector interests to increase efforts to conserve existing cutthroat populations and recover those that have been lost.

Westslope declines east of the Divide have been especially severe. In the upper Missouri basin, the approximately 200 remnant genetically pure populations occupy less than 5 percent of the subspecies' historic range. Most populations are tiny, some containing fewer than 50 fish in only a mile or two of high-elevation headwater rivulets. Within the upper Missouri River basin, the Big Hole watershed retains the most stream miles containing genetically pure core populations (130 miles, or 6 percent of originally occupied habitats). The Gallatin has the least (3 miles, or less than 1 percent of originally occupied habitats). Though angling for both westslope and Yellowstone cutthroat is allowed in Montana, those caught in most streams east of the Divide must be released unharmed.

Many anglers don't care that westslope numbers have declined, and are more than happy to fish for brown, rainbow, or other non-native species. But according to Bruce Farling, executive director of Montana Trout Unlimited, a growing number of trout fans appreciate catching wild, native cutthroat in an environment where the subspecies has evolved and persisted for thousands of years. "People are coming from all over the country to fish for native cutthroat in Montana," says Farling. "And a lot of Montanans grew up fishing for cutts and still take a special pleasure in catching them."

OBSTRUCTIONS: BAD AND GOOD

Though westslope cutthroat are the same fish on either side of the Divide, the conservation threats and challenges differ greatly. Several population on the west side are still robust and occupy more than 50 miles of connected habitat in large river systems such as the Blackfoot, Clark Fork, and Flathead. The primary problem on these waters are dams and other obstructions—from large hydropower facilities to washed-out culverts—that break up what biologists call connectivity. Trout need to move widely in river systems so they can migrate to historic spawning streams and other habitats. This mobility reduces inbreeding and the widespread die-offs caused by massive drought or other severe environmental conditions in local waters. Dam removal, such as the historic dismantling of Milltown Dam now underway at the confluence of the Blackfoot and Clark Fork, restores connectivity.

The conservation challenge is different east of the Divide, where FWP rates the risk of westslope cutthroat extinction for many local populations as "high to extreme." Brown and rainbow trout dominate the major rivers in this part of Montana. FWP officials acknowledge it would be impractical and unpopular with most anglers for the department to attempt large-scale cutthroat restoration on the Madison, Missouri, and other blue-ribbon waters. Instead, FWP is focusing on just a handful of tributaries. "We're restoring cutts on a few larger streams such as Cherry Creek and the South Fork of the Judith River," says Moser, "but for the most part we are currently limited to protecting the small

> "Cutthroat restoration is not a one-size-fits-all deal, as some people think. It's different...even from stream to stream."

pure populations in the headwaters from competition with brook trout and potential hybridization with rainbows."

Because genetic mixing with rainbow trout is a constant threat to cutthroat populations on the east slope, obstructions are actually viewed favorably there. Lowhead dams, perched culverts, and natural features such as waterfalls prevent rainbows from moving upstream and mixing with pure-strain cutthroat. Some of the obstructions come from unlikely sources. On the Belt Creek drainage near Neihart, for example, historic mine tailings along Carpenter Creek have for more than seven decades created a chemical blockade that stops the upstream movement of brook and rainbow trout. Upstream from the toxic runoff, a remnant westslope population has retained a precarious foothold in the more pristine headwaters.

On Muskrat Creek, Nelson and Moser head downstream to check on a small dam-like barrier built in 2003 to prevent other trout species from mixing with cutthroat. "In many situations east of the Divide, if we didn't have barriers like this one, we wouldn't have cutts," Nelson says. They examine the structure to see if the newly discovered brook trout somehow sneaked past. Most likely, the biologists conclude, a few brookies evaded capture when crews removed the non-natives several years ago, or an angler intentionally or accidentally transpotted the trout over the barrier.

Barriers may help preserve genetic purity and prevent competition from brook trout, but they can also create problems. In addition to breaking connectivity, obstructions isolate small populations and make them vulnerable to inbreeding, poor habitat conditions, or catastrophic events such as floods, fire, or drought. Farling says trout advocates have been arguing over the pros and cons of dams for years. Trout Unlimited urges the U.S. Forest Service to remove barriers such as poorly designed or washed-out road culverts that impede spawning runs. Yet the organization acknowledges that without barriers, some westslope populations would be ruined. "Increasingly, we and public conservation agencies like FWP are looking at the risks and benefits of barriers on a case-by-case basis," Farling says.

TAILORING ACTIVITIES

Cutthroat conservation on both sides of the Divide got a boost in 2007, when 18 interested parties, including TU and FWP, formally agreed to work cooperatively on restoring and conserving both the westslope and Yellowstone subspecies. In addition to evaluating individual barriers, parties to the agreement are working on projects that remove non-native trout in some waters, improve culvert design to link detached stream segments, and reduce hillside erosion that bleeds egg-smothering silt into streams. Other projects include raising and stocking cutthroat trout, transplanting cutthroat trout from one stream to another, installing barriers in some streams, and increasing public awareness of threats to the subspecies. Bruce Rich, FWP fisheries manager for southwestern Montana, points out that biologists tailor the various management activities to each specific trout fishery. "Cutthroat restoration is not a one-size-fits-all deal, as some people think," he says. "It's different for the two different subspecies, for the fish east and west of the Divide, and a lot of times even from stream to stream."

Muskrat Creek exemplifies both the rewards and challenges of managing and conserving east slope westslopes. Between 1997 and 2003, FWP crews removed more than 7,700 brook trout upstream from the barrier, mostly small fish less than 6 inches long. Fish removal is time-consuming, and it took electrofishing crews on Muskrat Creek 20 tries over several years before they believed they had removed all the non-natives. The good news was that, as brookies steadily declined, westslopes in the project area naturally increased, from fewer than 100 before

JEFF ERICKSON

removal efforts to more than 3,000 today. "There's an almost immediate positive response from westslopes when brook trout are removed," says Nelson. Muskrat Creek has proven successful enough to become a westslope donor site, providing genetically pure fish for transplanting to other streams. The bad news, of course, was the brookies' return. "With this type of project, you have to keep checking up on it," says Nelson.

On some waters where non-natives have completely taken over, FWP removes the fish using the chemical compounds antimycin or rotenone—derivatives of bacteria and tree roots that kill only gill-breathing animals. Applied properly and following EPA-approved label directions, these compounds create little or only a short-term effect on the environment. Nevertheless, some projects have been controversial. At Cherry Creek, southwest of Bozeman, local anglers denounced FWP for killing all the brook and rainbow trout to prepare the stream for cutthroat reintroduction. And in some mountain lakes, environmentalists have criticized the agency for fish removal projects. Moser and other biologists say piscicides are essential for cutthroat management. "If we lost this tool, we would lose the ability to restore larger and more complex streams," says Moser. "We've found that if people understand the benefits and risks of these projects beforehand, they are far more accepting than if they just hear about it afterward."

After fish removal, biologists stock pure-strain westslopes or place eggs into in-stream incubators, where the water's unique chemical characteristics imprint on developing embryos.

Moser and Nelson know they may be fighting a losing battle in some places. Recent DNA studies have revealed that some westslope populations previously considered pure have been tainted by rainbow hybridization. Record-breaking water temperatures over the past several summers are putting additional stress on struggling cutthroat populations. And then there are the anglers who question whether it is worthwhile to save a mile of cutthroat water. "We hear these fish being called 'museum species,'" Moser says.

Despite the constant challenges and occasional setbacks, the biologists are committed to doing what they can to conserve and restore a trout subspecies intrinsic to the state's cultural and natural histories. "Aldo Leopold said that 'to keep every cog and wheel is the first precaution of intelligent tinkering,'" says Moser. "That's what we're trying to do here. We have an obligation to not let these fish disappear just because the restoration work is hard or controversial. Westslope cutts are a part of Montana's natural heritage."

The fish also make for great sport in some of the state's most scenic and isolated settings. After trying to keep up with the two indefatigable biologists for a couple of days as they checked up on various westslope projects, I finally have a chance to do some "research" of my own. Four-weight fly rod in hand, I headed up an enticing stretch of the South Fork of the Judith River a bit downstream from another westslope restoration project. There I catch several rainbows and hybrid cuttbows—beautiful fish in their own right, but not what I was hoping for. In five years or so I'll be back, upstream from a recently installed fish barrier, hoping to land some wild, brilliantly colored westslopes in water where they have flourished since the end of the last Ice Age. And even if I don't catch any, it will be enough just to know they are there.

LOOKING FOR LEAKS FWP fisheries biologist Lee Nelson (left) inspects a damlike structure on Muskrat Creek built to keep rainbow and brook trout from moving up into waters containing pure-strain westslope cutthroat trout. He and colleague Dave Moser later conclude that a handful of brookies discovered during a population survey may have escaped earlier attempts to eliminate the non-natives. Nelson says constant monitoring of westslope cutthroat restoration streams is essential to ensure that Montana's remnant populations continue to survive in their native waters (below). "Just because restoration work is hard or controversial doesn't mean we shouldn't do it," he says. "Westslope cutts are a part of Montana's natural heritage."

CHUCK & GALE ROBBINS

IF YOU DON'T SEE BIRDS HERE, YOU'RE JUST NOT TRYING.

10 GREAT SPOTS TO WATCH BIRDS IN MONTANA

BY CRAIG AND LIZ LARCOM

Freezout Lake Wildlife Management Area, 30 miles west of Great Falls, is Montana's best-known birding site. Each year birders from across Montana and throughout the United States visit the shallow, 1,500-acre basin, which attracts 100-plus species, from avocets to yellowthroats. But Freezout is not the only spot to see a wide variety of bird life in Big Sky Country. As avid bird watchers and professional photographers, we have found birding hotspots across the state, from the flat prairies in the northeast to mountainous backcountry lakes in the southwest. Listed here are five of our favorites, as well as another five picked by birding experts from across Montana.

CRAIG & LIZ LARCOM

Birders look for prairie species on state land in Valley County north of Glasgow (see page 14 for details and directions).

Lazuli bunting
DONALD M. JONES

Yellow-rumped warbler
DONALD M. JONES

1 Onstad Park, Westby

Each May, we drive east to Westby to see a warbler concentration unlike anywhere else in Montana. The colorful birds are moving between winter habitat in Central and South America and summer nesting places in the insect-rich boreal forests of Alaska, British Columbia, and Alberta. As they fly above the prairie, the warblers are drawn to a tiny 1-acre park in this small town tucked into the northeastern corner of the state. Canada, chestnut-sided, yellow-rumped, and other warblers find shelter and food in the park's trees, hedges, and bushes. They also drink from a hose that drips into a small pool. "Sooner or later every bird comes to the water," says Ted Nordhagen, a local bird illustrator who has seen an amazing 29 different warbler species here over the years.

Some springs the park contains a dozen or more warbler species at one time, while during other years only a few species dribble through. When activity is low at Westby, we look for birds at nearby Medicine Lake National Wildlife Refuge.

The Westby park becomes an even greater warbler magnet during fall. Migration is heaviest mid-August through mid-September, when the birds are building energy reserves for the long trip south. A bonus bird sighting at Westby is always possible. Over the years, Nordhagen has seen such rarities as the Connecticut warbler, Philadelphia vireo, and yellow-bellied flycatcher.

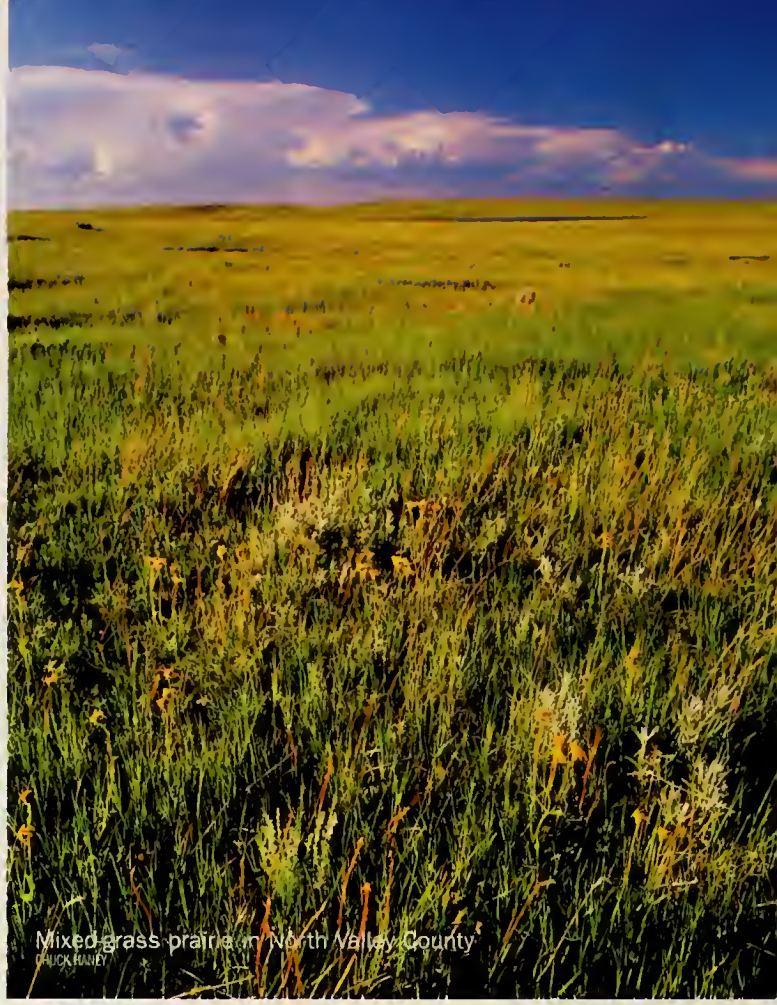
For more information. Westby city hall, (406) 385-2445; nemontanabirdingtrail.org.

2 State Land, North Valley County

The long-billed curlew, marbled godwit, and western meadowlark are the most vocal and visible species at this large prairie parcel on the west side of Montana Highway 24, roughly 4 miles north of Glasgow Base Pond (a gravel pit pond 20 miles north of Glasgow on MT 24). The parcel is part of a National Audubon Society Important Bird Area called the North Valley Grasslands, one of the largest tracts of mixed-grass prairie in the United States.

At a glance, the site looks like a uniform field of grass. But Bureau of Land Management (BLM) wildlife biologist John Carlson advises visitors to look carefully. The grassland is composed of many different plant species of differing heights and types. This prairie mosaic provides diverse habitat for grassland bird species including McCown's longspur, Baird's sparrow, and Sprague's pipit. These and other grassland birds have beautiful songs, and Carlson recommends early morning from mid-May to mid-June to hear them sing in the expansive landscape. "You get out there and are surrounded entirely by prairie," he says. "There's such a variety of grassland bird species. You won't find many other places like it left in the world."

For more information:
BLM Glasgow Field Station, (406) 228-3750.



Mixed-grass prairie in North Valley County
CHUCK HANEY

Dusky flycatcher
DONALD M. JONES

3 Bear Canyon, east of Warren

Step into the lower and middle reaches of Bear Canyon, on the southwest side of the Pryor Mountains, and you'll think you're somewhere in Nevada's Great Basin desert. Blue-gray gnatcatchers, green-tailed towhees, and pinyon jays are among the birds you can spot in this driest part of Montana, which receives just 5 inches of moisture each year.

Ornithologist Dr. Jeff Marks has often camped in this National Audubon Society Important Bird Area to band gnatcatchers as part of a research project with the Montana Natural Heritage Program. Marks says visitors may also see yellow-breasted chats, sage thrashers, loggerhead shrikes, MacGillivray's warblers, canyon wrens, and dusky flycatchers.

You'll need a detailed BLM or other map to find this spot, and a high-clearance vehicle to reach it. From Laurel, take U.S. Highway 310 south to Warren, then head east on a paved road for about 2 miles. When you see a BLM sign, turn right on the dirt road (which is not all-weather). After roughly 2 miles, you'll see a sign on the left that says Bear Canyon. Follow that two-track road to the mouth of the canyon and park. Look for the gnatcatchers among sagebrush and junipers, and scout the cottonwoods for other songbirds. Note: No off-road travel allowed.

For more information. BLM Billings Field Office, (406) 896-5013; Beartooth Ranger District, (406) 446-2103; the Montana sites at audubon.org/bird/iba.

Craig and Liz Larcom are photographers and writers in Great Falls.

10 HOTSPOTS LOCATION KEY

1. Westby
2. North Valley County
3. Bear Canyon
4. Bluebird Trail
5. Bridger Bowl
6. Benton Lake NWR
7. Red Rock Lakes NWR
8. Georgetown Lake
9. Mission Valley
10. Pete Creek

Birding trails popping up across Montana

Find additional birding hotspors along Montana's new "birding trails." The trails are chains of bird-rich sites, linked by roads, designated by local and state birding experts. Montana has seven birding trails, and more are being added each year. The "trails" approach is being adopted across the country by local communities hoping to attract the nation's growing number of bird watchers.

In Montana, establishment of new birding trails is coordinated by a committee of ornithologists and other bird experts chaired by John Carlson, a BLM wildlife biologist in Glasgow. The committee advises local groups representing tourism, public lands, and bird watching interests on how to establish a trail, set up a website, and produce printed materials.

For information on western Montana birding trails, visit montanabirdingtrail.org. For a brochure on the Bitterroot Trail, call (406) 327-0405. For the Northeastern Plains Birding Trail brochure, call (800) 527-5348 or visit nemontanabirdingtrail.org. Russell Country, the state's north-central tourism region, has a birding trail detailed in a brochure available by calling (800) 527-5348 or visiting russell.visitmt.com/birding. For birding opportunities around West Yellowstone, call (406) 646-7701 or visit yellowstonevacations.com and click on "Area Attractions."

Mountain bluebird

4 Bluebird Trail, south of Stanford

The mountain bluebird's intense sky blue plumage enchants us every time we see it. Mountain bluebirds are scattered throughout the state. But when we need our yearly fix of blue, we head to this scenic bluebird trail on the northeastern edge of the Little Belt Mountains anytime between late March and September.

Great Falls resident Bob Niebuhr, president of the conservation group Mountain Bluebird Trails, created this series of bluebird boxes along country roads in 1991. He has installed more than 100 boxes south of Stanford along Dry Wolf Road, Running Wolf Road, Divide Road, and Sage Creek Trailhead Road. The boxes contain holes just big enough to admit bluebirds but small enough to exclude magpies, raccoons, and other predators. (Another blue bird, the tree swallow, also uses the houses. You can easily distinguish this species from the mountain bluebird by its white belly and gliding flight.)

For more information: Mountain Bluebird Trails, (406) 453-5143; russell.visitmt.com/birding.

300

One man's quest to list 300 different species in 365 days

By Gary Swant

I started seriously birding about 15 years ago and find it a leisurely hobby that brings me a great deal of pleasure and satisfaction. Not so leisurely is another related interest: bird "listing." In this competitive activity, birders try to record as many species as possible and beat their previous records or those of others. Last year I undertook a bird-listing marathon in which I drove nearly the circumference of the Earth in a quest to do something no Montana birder had ever accomplished.

My goal was to top the number of different species seen in Montana in one year. The previous record was 293, set by Wayne Tree of Stevensville in 2004. (Two other birders had succeeded in finding 304 and 307 species, respectively, but their lists were never submitted or published by the American Birding Association. The organization maintains records for the number of birds seen in a day, month, and lifetime by county, state, and province. I was considering only official ABA records.) I had tallied 265 in 2005 and 278 in 2006. By focusing exclusively on birds for a year—putting aside family vacations, fishing, hunting, and most other activities—I figured I could top the state record. I set my goal at 300 species. On January 1, 2007, I began my quest.

My first rule was to record a species whenever possible, even if I knew I could get the bird more easily later in the year. My second rule was to enlist the help of other birders by using an Internet bird server called the Montana Outdoor Birding Group. I e-mailed several active members, explained my goal, and wrote that I would send them my list when I reached the first 100 species, and then again each time I added another 25. Throughout the year, more than 30 birders contacted me about new species not yet on my list. The third rule was to have someone with me as often as possible for documentation, especially for rare species. I violated that rule 37 times. Fortunately, I saw 34 of those species later in the year when someone was with me. The remaining three species were not rare and therefore not contested.

GARY SWANT

TIRED EYES Swant at the National Bison Range, near Moiese. The marathon birder uses an electronic device that allows him to hear bird songs at high frequencies.

In January, I birded 19 days and recorded 103 different species. February brought an additional 18 species during 11 trips. Another 16 trips in March resulted in 27 additional species. Spring birding in April yielded 42 more species in 12 outings, and another 83 were added in May after a long and fruitful trip to eastern Montana. With the year not yet half done, I had tallied 263 species and begun to think I might reach my goal. Then things got hard.

By June, I was finding it increasingly difficult to find new species, and added only 22 that month. Still, I was closing in on my goal. In early July I added 2 more, bringing my total to 297. I drove to Glacier National Park to try for the last three. Number 298 was a white-tailed ptarmigan, number 299 was a boreal chickadee, and number 300 was a black swift I spotted at dusk at Avalanche Campground with my wife and 14-year-old grandson present. The remainder of the month brought in another 6 species. I picked up just 1 in August, but during the fall migration in September, I took another long trip to eastern Montana and added 14.

At this point, I had seen and identified 321 different species. I had reached my personal goal and exceeded all official and unofficial state records. But I still had three months left in the year. I scoured MOB reports on the Internet and stayed close to the phone.

Many of my fellow birders were as excited about my quest as I was. In October and November, I received calls on a Pacific loon (number 322), a white-winged scoter (323), an Anna's hummingbird (324), a black scoter (325), a cackling goose (326) that required a 900-mile drive to Fort Peck, and a glaucous-winged gull (327) in Helena initially seen by a friend. My final bird was just 7 miles from home—a rusty blackbird that a buddy had spotted south of Deer Lodge. It was in a feedlot with a mixed flock of red-winged blackbirds, European starlings, and Brewer's blackbirds.

I drove 24,003 miles last year on my record-setting endeavor, and I saw a remarkable number of marvelous bird species. But most significant were the many friendships I made with birders during my journey, who called to report their sightings and showed me so many wonderful, out-of-the-way birding locations across Montana. ■

Gary Swant of Deer Lodge is an educational consultant and birding guide. To see his 2007 Montana list of 328 species, e-mail him at birdmontana@rfwave.net.

Bridger HawkWatch
CRAIG & LIZ LASCOM

5 Bridger HawkWatch, Bridger Bowl

If the 2,100-foot climb up the steep trail to the HawkWatch International (HWI) site above Bridger Bowl doesn't leave you breathless, the spectacular view of flying raptors just might. Visitors to this natural funnel for migrating raptors have seen more than 100 golden eagles in a single day (though such sightings are not common). According to Mike Neal, HWI field studies coordinator, more golden eagles migrate through here than any other place in the lower 48 states. Some days, the birds are nothing more than dots, flying a mile or more away; other days they fly close enough to be seen clearly without optics.

At the summit is a platform where HWI volunteer observers have a 360-degree view to see and record raptors. An owl decoy tempts some of the hawks and eagles to fly even closer. The site is one of two dozen HWI sites nationwide. Visitors are welcome.

Neal says the best time to see raptors is during the first two weeks of October from 10 a.m. to 2 p.m. and 4 p.m. to 6 p.m.

For more information:
Bozeman Ranger District, (406) 522-2520; www.montana.edu/misc/raptor.html.

6 Benton Lake National Wildlife Refuge

Chestnut-collared longspurs and long-billed curlews thrive in Benton Lake's native prairie. Closer to water, a birder may also see black-necked stilts, white-faced ibises, eared grebes, black-crowned night-herons, Franklin's gulls, black terns, Wilson's phalaropes, yellow-headed blackbirds, American avocets, and marsh wrens. Rounding off the birding bill are nearly a dozen different species of waterfowl, which in late May to mid-July display their colorful breeding plumage.

The refuge, 10 miles north of Great Falls, also provides a blind (reservations required) for watching sharp-tailed grouse make their lively sunrise courtship display in April and May. But be sure to set your alarm clock: The show starts before dawn.

For more information:
Benton Lake NWR, (406) 727-7400; bentonlake.fws.gov.

Redheads
NICK HILDO

7 Red Rock Lakes National Wildlife Refuge

Every birder needs to see a trumpeter swan at least once in her or his life. This watery, mountain-rimmed site just west of Yellowstone National Park is the best place in Montana to do it. The federal government established the refuge in 1935 specifically to save the swans, which had dwindled to fewer than 100 known individuals nationwide. Geothermal activity in the area keeps the lakes ice-free even in midwinter, allowing the swans to live there year-round.

Visit in late May through June, when swans and other breeding birds are active but mosquitoes have yet to hatch in large numbers. Look for swans at Shambo Pond and Lower Red Rock Lake, but avoid getting too close to these sensitive birds. Another great time to visit is late October, when trumpeters, tundra swans, and other migrating waterfowl fill the air.

Visitors can also see peregrine falcons and prairie falcons at the refuge. Upper Lake Campground draws a particularly wide assortment of songbirds. The refuge is also one of the best spots in Montana to see sandhill cranes.

The road to the refuge is rough, so call ahead to check on road conditions and current swan information. The headquarters is open weekdays.

For more information.
Red Rock Lakes NWR, (406) 276-3536.

Trumpeter Swans

Pine grosbeak

8 Georgetown Lake and vicinity

In 2007, Gary Swant of Deer Lodge drove more than 24,000 miles to see and identify 328 bird species, the most ever documented in Montana in a single year (see page 16). This year he is sticking close to home, visiting favorite birding sites such as Georgetown Lake, Silver Lake, and East Fork Reservoir.

"You could take a little trip to the three lakes and expect to see 50 to 70 bird species in summer and 30 species in winter," he says. Swant, who runs a bird guiding service called GoBirdMontana with his wife, visits the lakes most often in winter. Before they freeze, he may find a migrating common loon or an errant scoter or long-tailed duck. After snowstorms, Swant checks the area's forests for flocks of gray-crowned rosy-finches and black rosy-finches. In late winter, he particular looks for great gray owls. The owls hunt forest edges where stands of Douglas fir and lodgepole pine open up into high-mountain meadows. In January and February, the great grays hunt all day, boosting a visitor's chances of seeing one.

Swant says he also sees blue jays, Steller's jays, gray jays, evening grosbeaks, and pine grosbeaks at bird feeders among the area's increasing number of houses. And he has seen Harris's sparrows while strolling around East Fork Reservoir.

For more information: Pintler Ranger District, (406) 859-3211; GoBirdMontana, gobirdmontana.com.

9 Mission Valley

The Mission Valley is known for its lake and mountain scenery, but the up-close views of the area's abundant bird life can be equally spectacular. Water birds flock to the Pablo and Ninepipe national wildlife refuges. Pygmy nuthatches bounce in the ponderosa pines at Boettcher Park in Polson. Songbirds such as the lazuli bunting, American dipper, and Townsend's solitaire nest at the National Bison Range. Birders who visit wetlands around the valley may also spot trumpeter swans that have been released by the Confederated Salish and Kootenai Tribes in cooperation with state and federal agencies.

According to ornithologist Dan Casey, chair of Montana Audubon's Bird Records Committee, the Mission Valley is one of the best places to see winter raptors. "It probably has the highest density of rough-legged hawks in the western United States," he says. Casey recommends looking for raptors on back roads such as the one west of Pablo actually named Back Road. During the 24 years Casey has been birding in the area, his most remarkable sighting came in the winter of 2005–06, when snowy owls moved down from Canada in great numbers. "One time I was able to see a group of a dozen snowy owls through the lens of my spotting scope," he says.

For more information: National Bison Range, (406) 644-2211; the Flathead Valley section of "birding hotspots" at mtaudubon.org (click on "Birdwatching").

Mission Valley wetlands

Spruce grouse

10 Pete Creek
Kootenai National Forest

The Pete Creek area near Yaak might be considered the chickadee capital of Montana. The forested drainage holds four species—black-capped, mountain, chestnut-backed, and even the rare boreal—in addition to many other birds. The 21-mile drive from Pete Creek Campground to Northwest Peak Scenic Area moves from valley bottom to subalpine elevations. It passes a wetland that's likely to house western tanagers, and a burn where American three-toed woodpeckers and black-backed woodpeckers live. Pete Creek is also home to American dippers.

Libby photographer Donald M. Jones says the Pete Creek area is a great place to see spruce grouse, and the nearby Northwest Peak area is good for spotting dusky grouse, also known as blue grouse. "In the evening, listen for a veery or a varied thrush at the Pete Creek Campground," he adds.

Jones recommends that visitors wait until the second or third week of June, when snowdrifts have melted from the road. He also advises visitors to watch out for logging trucks. One other tip: Bring a fly rod. Hawkins Lake is just a quarter-mile hike from the road and holds a healthy trout population.

For more information: Troy Ranger Station, (406) 295-4693.

HOMECOMING Native sauger (top) and pallid sturgeon (left) are migrating upstream past 12-Mile Dam on the Tongue River this spring thanks to a new fish passageway built around the 123-year-old structure. Below: Governor Brian Schweitzer helps open the headgates at a ceremony in September 2007.

CLOCKWISE FROM TOP: BILL LINDNER PHOTOGRAPHY; THE NATURE CONSERVANCY; ANDREW MCKEAN; MONTANA FWP

BYPASSING THE BARRIER

For the first time since Grover Cleveland was president, saugers, sturgeon, and other fish species are swimming up the Tongue River past 12-Mile Diversion Dam.

BY BRETT FRENCH

Consider it a homecoming. This spring, for the first time since the late 1800s, saugers, suckers, channel catfish, pallid sturgeon, and other fish species are migrating from the Yellowstone River up the Tongue River past a dam to spawning waters far upstream. The fish are able to circumvent 12-Mile Dam and swim an additional 50 miles thanks to a recently constructed 760-foot-long, rock-lined side channel, called the Muggli Fish Passage. Two headgates control water flow into the passage, completed in September 2007. "Within 15 minutes of first opening the headgares, we saw fish moving up the passage," says Burt Williams, Yellowstone River Project manager with The Nature Conservancy, a partner in the project. That movement to upstream spawning habitat could be critical to the survival of fish such as the blue sucker, whose population has declined over the past decades. "In the big picture, this bypass will improve the long-term survival of several species that otherwise might be in real trouble," says Brad Schmirz, regional fisheries manager for Montana Fish, Wildlife & Parks in Miles City.

The Tongue River gurgles to life in the Bighorn Mountains of Wyoming before traveling northeast into Montana and feeding the Yellowstone River at Miles City. Along the way, it becomes an important recreational resource in water-deprived south-central Montana. Tongue River Reservoir, an impoundment of the river just north of the Wyoming border, is a popular warmwater fishery that also attracts boaters and warerskiers. As the river continues downstream from the reservoir, it provides water needed for both irrigation and fish survival.

The headgates to the Muggli Fish Passage will remain open for most of the year, allowing for fish movement. If river flows drop too low at 12-Mile Dam during the irrigation season, the headgares will close to provide the local irrigation district with its legal water allotment. But when the district does not need all of its water, such as during the spring spawning run, it has agreed to allow the remainder to flow around the dam down the new side channel. "This passageway and how it has been negotiated with the irrigators shows that these rivers can susrain multiple use," says Schmitz. "We can get water for irrigation and have healthy ecosystems at the same time. The two aren't mutually exclusive."

That's key, because the Muggli Fish Passage could lead the way for eventual re-engineering of other irrigation diversion dams along the Yellowstone River. Such cooperative projects among irrigation districts, state and

federal agencies, and conservation groups could reopen long-blocked river migration routes for species such as the federally endangered pallid sturgeon and state "species of special concern" like the paddlefish.

Diversion dams divert portions of river flow into a series of canals used to irrigate crop fields. Though essential for farmers and ranchers, the dams can harm fish populations. Many river species need to travel great distances to use spawning, feeding, and wintering habitats. Since construction of 12-Mile Dam in 1885, for example, the number of species upstream from the structure has dwindled to 20, compared to more than 40 downstream.

In the 1960s and '70s, sauger runs up the Tongue were strong, but the fish stacked up behind the dam, blocked from going any farther. That run has since dwindled, prompting Schmitz and other biologists to wonder if those river-running sauger may have lost the instinct to migrate up the Tongue. "We're not sure if the Tongue River sauger adapted or changed their habits, or if we've lost those runs entirely," says Schmitz.

BLOCKED RUNS Tributaries to the Yellowstone are essential breeding waters for many fish species. Before construction of diversion dams, fish could move up and down the Yellowstone and tributaries to spawning and wintering habitats. Those historic routes, some blocked for decades, are now being restored.

Twelve years after being elected irrigation district secretary-manager in 1987, Muggli installed a screening device that greatly reduced fish entrainment. But an even greater goal was to build a passageway so fish could bypass the dam on their way upstream. Muggli mobilized a coalition of public agencies and conservation groups to raise funds and obtain the necessary permitting and agreements. The T&Y Irrigation District provided land and donated time and equipment.

Schmitz says success of the Muggli Fish Passage is making additional work on the Tongue River possible. FWP has begun removing two diversion dams upstream from 12-Mile—the SH Diversion and the Mobley Diversion—which will give fish access to another 140 miles of river up to Tongue River Reservoir. The two small dams are no longer needed because local ranchers now use pumps to draw river water for irrigation. "That's an awful lot of habitat we'll be opening up," Schmitz says. "It's not often that a fisheries biologist gets to be a part of something like this. In terms of making an improvement to a fishery, the new passageway and the dam removals are monumental."

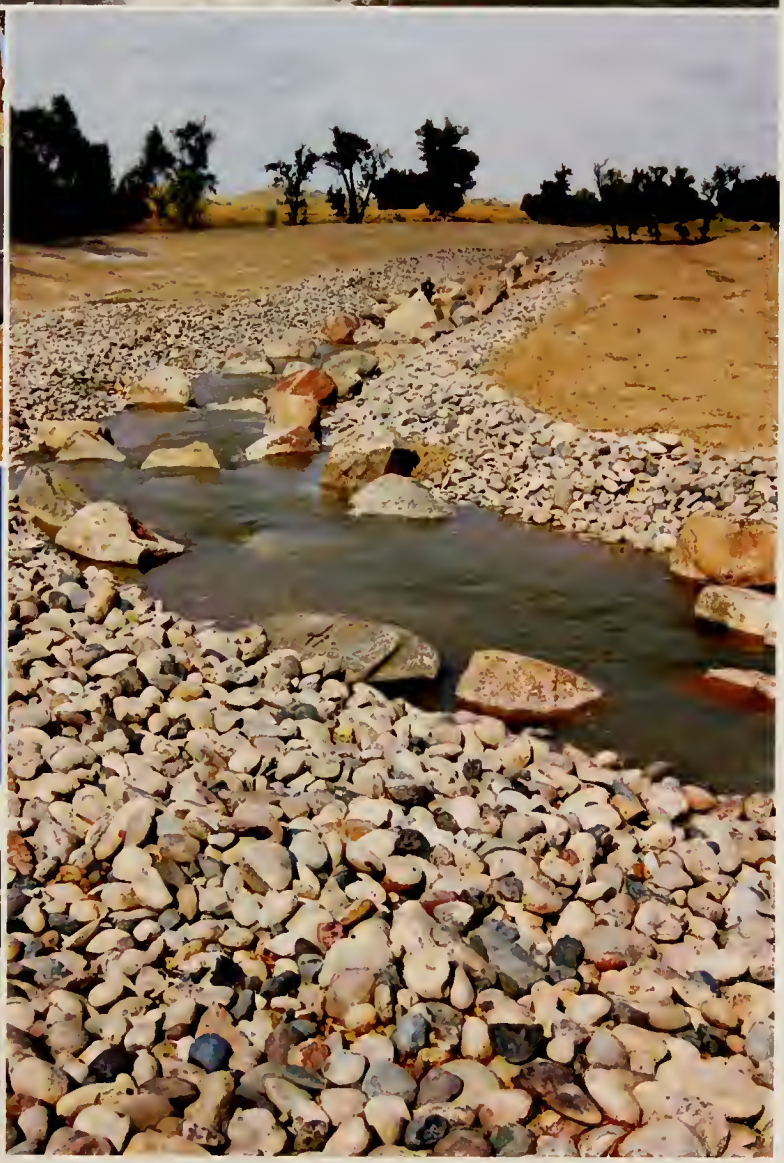
The Tongue River projects are also adding momentum to similar fish movement projects on the Yellowstone River. The biggest one is at Intake Dam east of Glendive, where an estimated 1 million fish each year are entrained in the canal system emanating from the dam. Operated by the Bureau of Reclamation (BOR), the dam is also considered a major barrier to spawning pallid sturgeon, one of the country's most endangered fish species. Last November, the U.S. Army Corps of Engineers received congressional authority to help build a fish screen and a passageway similar to those at 12-Mile Dam. Brent Esplin of the BOR says the growing momentum at Intake and 12-Mile has led to plans by agencies and the local irrigation district to build a fish bypass at Cartersville Diversion Dam at Forsyth. "Folks will first want to see how Intake works out and if it meets the needs of irrigators and aquatic species," he says. "But it makes sense to do the next project at the next dam upstream from Intake."

> **"We as irrigators need to look out for other water users. The less intrusive we can be on the resource, the better. There's no reason anyone should drain a river."**

Muggli says he is gratified knowing his work at 12-Mile may be inspiring other irrigation districts to work with public agencies and conservation organizations. "We as irrigators need to look out for other water users," he says. "The less intrusive we can be on the resource, the better. There's no reason anyone should drain a river. We need to figure out how to conserve water so we've got it for other beneficial uses."

Muggli finally solved the water allocation problem on the Tongue River. But he says the effort took nearly 40 years and required more meetings, paperwork, and sheer bullheadedness on his part than he ever dreamed possible. "I never thought it would take this damn long to get a passageway built," he says. "But I knew that someday, if I lived long enough, we'd get it done."

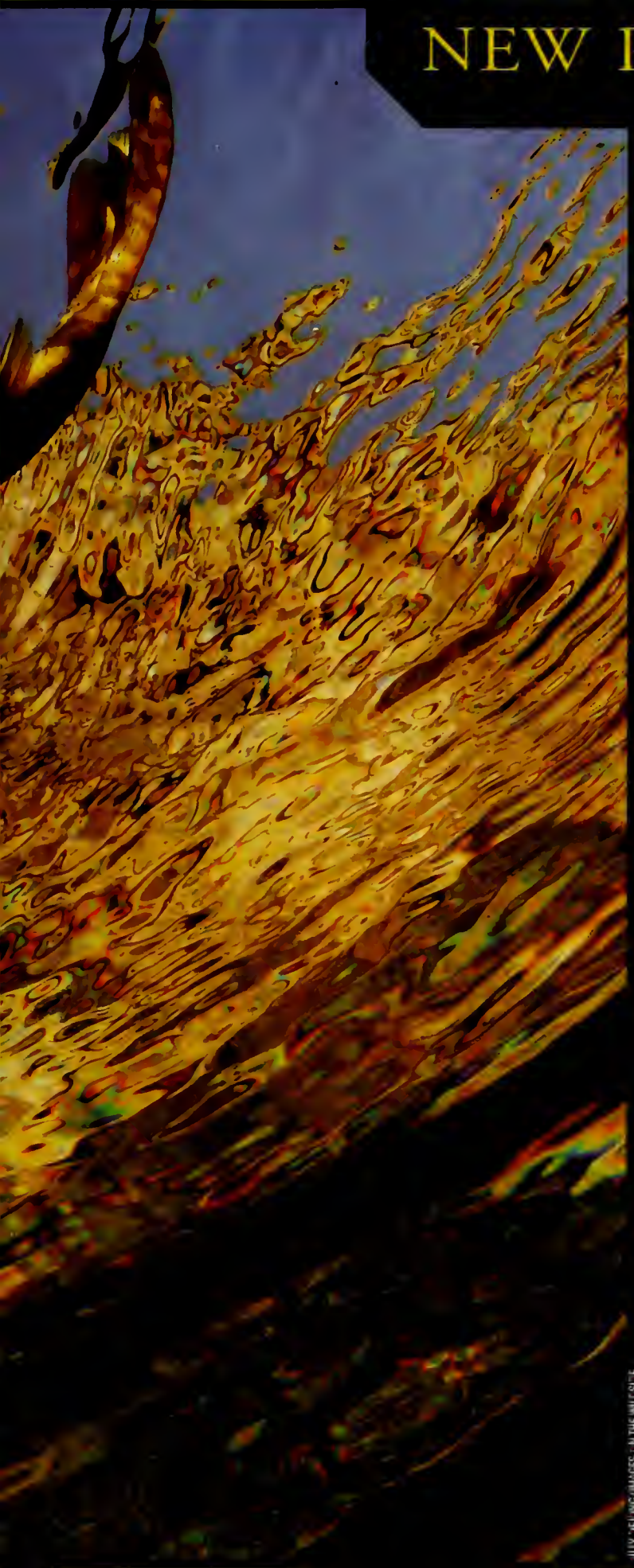
Writer Brett French lives in Billings.



FISH ADVOCATE Farmer and irrigation district secretary-manager Roger Muggli of Miles City (above, next to the passageway) vowed he would find a way for fish to circumvent the diversion dam (top) his family has managed for three generations. After waters were released into the 760-foot passageway (right), fish immediately began moving upstream. The progress at 12-Mile Dam has inspired plans for fish passageways on the Yellowstone River at Cartersville Diversion Dam (below) and others.

CLOCKWISE FROM TOP: BRETT FRENCH/*THE BILLINGS GAZETTE*; THE NATURE CONSERVANCY; USFWS; BRETT FRENCH/*THE BILLINGS GAZETTE*

NEW PERSPECTIVES ON TROUT FISHING



JILLY JOEL ING/IMAGES IN THE WILD SITE

PHOTO ESSAY

Anglers don't view trout and trout fishing the way they did 40 years ago. When I was a boy, people fished from the bank or waded along a stream. They mainly used spinning tackle, and most of them killed the fish they caught. My dad carried a creel, and he used it.

But then anglers learned they could cover more water by fishing from a drift boat or raft. More people took up fly-fishing. And they started releasing their catch so the trout could be caught again. Today it's rare to see someone kill a trout, even when it's legal and biologically defensible.

Photographs that appear in books and magazines both reflect and influence the way anglers perceive trout fishing. As recently as the early 1980s, it was still common to see pictures of anglers hoisting their limits of dead trout. But then, responding to readers' growing conservation ethic, publications stopped running "stringer shots." The classic fishing photograph became a smiling angler kneeling in the shallows, left hand under the trout's head, the right holding the tail.

The images continue to change. Many photographers now skip the "grip-and-grin" payoff shots and focus on other aspects of trout fishing—the preparation, the stalk, the cast, the insects, the weather, the landscape. The camaraderie.

In the following pages, you'll find images that recently caught our eye, photos that represent new ways of looking at trout and trout fishing. Included are statements from three exceptional photographers who reveal just a bit about the images they look for during a shoot, and how they capture those scenes.

Their comments provide insight into the world of trout fishing photography, just as their images and those of other photographers depict the fish and the sport in ways we've never seen before.

—Tom Dickson, editor

CLOCKWISE FROM TOP LEFT: © USAN SMETANA; USAN SMETANA; KEVIN L. KENNY GUSSEN; ARCHER; DANIEL J. COX; JEREMIE HILLMAN

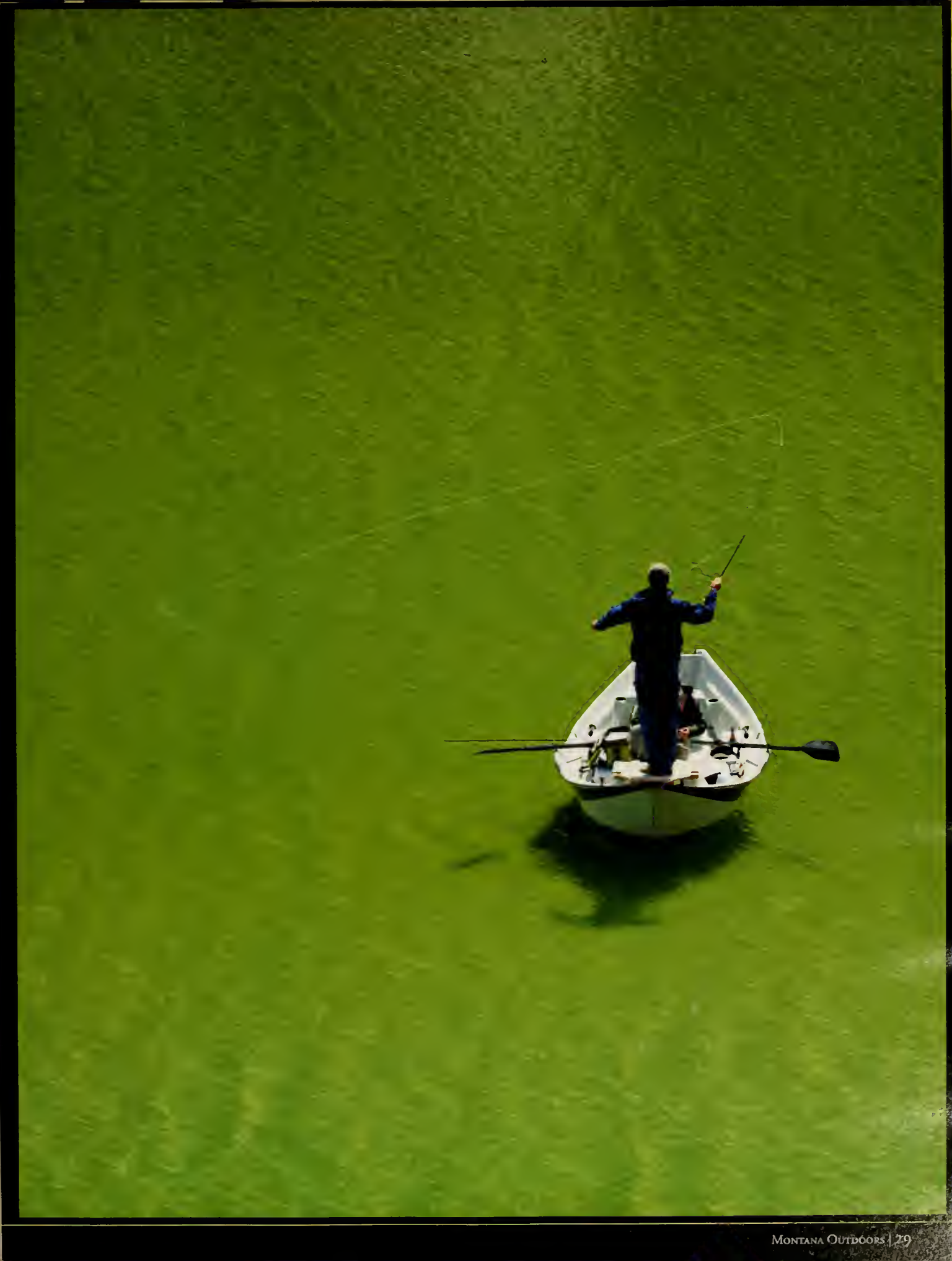
"Three-fourths of the time when I'm out doing photography, I'm not actually taking pictures; I'm just looking. Like with the image of the guy reflected in the water. I was watching him for a long time, and then I saw that reflection and thought it was such a cool view, one I'd never seen before. I'm always looking for something different, something out of the ordinary. And yes, of course, some of my shots are strange—too strange sometimes for magazines to use—but what the heck, they still make me happy. And you know what? That's what I'm really doing more than anything: looking for images that make me happy."

—**Dušan Smetana**, *Bozeman*

"Whenever I have a camera in my hands, I find that I would rather take photographs than cast for fish. When I am taking photos, I never preplan or try to set up a shot. I find that if I just let people fish, then the shots will create themselves—I just have to be ready when they happen. I've only been a photographer for three years, but I've been a fishing guide since 1992, and I am on the water for more than 200 days a year. That gives me plenty of opportunities to shoot. More important, it has given me a chance to appreciate the grace and beauty that fly-fishing offers."

—**Brian Grossenbacher**, *Bozeman*

CLOCKWISE FROM TOP LEFT: MARNEL LYTING; JASON & JENNY GROSSENBACHER; CHUCK & GALE HEBBINS



CW, FROM TOP LEFT: MICHAEL HARRING; JERRY & CATHY FOX; KELLY GORHAM; HUSAN SWETNAM; KELLY GORHAM

"I started photography about 12 years ago. Over the past few years, I've been doing more and more of my work underwater. It's pretty exciting and fun to get in a wetsuit and float down a creek and watch trout in their natural surroundings. My photography expresses my feelings about trout and the aquatic world they live in. When you spend time with wildlife, you are able to gain their trust. They know you mean them no harm, and then they go about their natural business, and that's what I try to photograph. I feel privileged to be allowed in there, into their world, to witness that.

—**Michael Haring**, *Big Sky*

THAT CRITTER'S

Montanans love wildlife. But it's one thing to marvel at a mountain goat in Glacier National Park or watch a mule deer trotting across the prairie. It's another to have a striped skunk camping in your kitchen or a big brown bat fluttering across the bedroom.

When conflicts arise between people and wildlife, many homeowners want the animal removed at once. Local Montana Fish, Wildlife & Parks staff can provide advice and information but, with the exception of mountain lions and other potentially dangerous wildlife, not wildlife removal services. That's where professional wildlife control operators, or nuisance trappers, come in.

Nuisance wildlife removal is becoming a growth industry. As more and more people build homes in the countryside, now called the rural-urban interface, problems with beavers and other wildlife continue to grow. Each year, FWP offices across Montana receive increasing numbers of calls from people reporting animals damaging property, hiding under foundations, or sneaking into houses.

Beavers in particular are a growing problem. Numbers have skyrocketed in many areas because low fur prices provide little incentive for recreational trapping. The problem has been amplified in states such as Massachusetts, Washington, and Colorado that have banned the use of steel traps for beavers. The U.S. Department of Agriculture's Federal Wildlife Services now conducts beaver damage management programs in more than 14 states. The agency says that for every $1 spent in managing beavers, $6.30 is saved by preventing damage to roads, bridges, dikes and dams, sewers, water treatment facilities, and landscapes.

Beavers are especially hard on trees, which they topple and chew up for food and dam construction. In most cases, tree damage can be considered simply a natural and tolerable occurrence, but sometimes beaver removal is required. For example, in 2005 growing numbers of the industrious rodents toppled century-old cottonwoods along the Flathead River at Old Steel Bridge Fishing Access Site, a few miles east of Kalispell. The extensive root systems of larger trees prevent riverbanks from eroding in high water, and the loss of cottonwoods could have caused severe erosion. The downed trees at the fishing access site also clogged trails and made parts of the area look like it had been hit by a hurricane. FWP staff tried wrapping fencing materials around tree trunks, but the beavers chewed through the wire or climbed the fence and just chewed higher.

Department officials finally resorted to calling Dave Wallace, owner of a wildlife removal business in Kalispell. "It was a ticklish little job," Wallace says. "It taxes your gray matter thinking about how you're going to get those guys out of there without an incident." Trapping and removing beavers is easy when using regular traps and in areas with no peo-

GOT TO GO

Professional nuisance trappers come to the rescue when wildlife gets a little too up close and personal. BY JOHN FRALEY

ple or pets, explains Wallace. But the fishing access site is a popular place for dog walking and is crisscrossed with hiking trails. Wallace, state director for the National Wildlife Control Operators Association (NWCOA), decided the safest option would be to use nonlethal snares. He set them on beaver runs far from human trails, using methods that prevent dogs from getting snared. Knowing that a trapped beaver could be dangerous to passersby, Wallace posted warning signs. He also checked the traps before dawn each day to remove any beavers caught the night before. After snaring and then killing the problem beavers, he skinned the animals and sent the pelts to fur auctions in Canada. Wallace dropped the carcasses off at the FWP office to be used for luring bears to culvert traps. Nothing was wasted, he says.

Bats, snakes, and skunks

The nature of a wildlife nuisance problem often differs from one area to another. Dave Salys, who runs a wildlife control operation in Billings, says that bats, skunks, and snakes are the top three animals he is hired to remove. "Bats are especially hard, because I'm usually dealing with tall ladders and a job that's at least two stories off the ground," he says. To remove bats, Salys usually installs a one-way door that allows the animals to leave the house on their own but makes it impossible to re-enter. "If you can solve the problem without touching the animal, so much the better," he says.

Salys often has to touch snakes, however. The reptiles can't be shot when inside buildings, so he must remove them by hand—an action that unnerves some clients. "I get people who won't even look at pictures of snakes so we can identify the species," he says. Salys has removed garter snakes, bull snakes, green racers, and rattlesnakes from basements, crawl spaces, houses, and yards.

> "The last thing you want to do is cause the animal to unload in a situation like that. This is just one more reason that I carry lots of liability insurance."

Skunks can be the biggest challenge. When these malodorous mammals set up residence in a garage, foundation, basement,

or home, wildlife control operators have to be extra careful not to trigger a spray when they attempt removal. A few years ago, a distraught woman called Wallace at 4 a.m. It turns out she hadn't completely shut the front door when she went to bed, and a large skunk had pushed it open and entered the house. After hearing a strange noise, she entered the kitchen and saw the skunk eating the contents of a garbage can it had tipped over. She ran to the bedroom and called Wallace. When he arrived, he noticed the house was fitted with brand-new furnishings and elaborate carpet and drapery. "I don't know what it is about skunk smell, but once it gets into a fabric you just don't get rid of it," says Wallace. "The last thing you want to do is cause the animal to unload in a situation like that. This is just one more reason that I carry lots of liability insurance."

> "I do lethal control quickly and efficiently.... When they think about it, they usually end up wanting whatever it will take for it not to be their problem anymore."

Wallace took his time with the skunk. He says that most homeowners want him to get rid of the animal immediately, but he has learned that some animals can't be rushed. An expert on skunk behavior, Wallace was able to slowly work the animal into an enclosure, all the while making sure it kept its tail down. "If you make a mistake with a skunk, you'll know it and everybody in the county will know it," he says.

Wallace has also successfully removed skunks using box traps and chemicals that immobilize the animals. "I just get right down on my belly and work with them," he says. Once, Wallace was called in on a job where a skunk had entered a house through the cat door and was curled up under the television set in the living room. He carefully sneaked up to the skunk and removed it without incident, using what he calls his "tickling" technique. "When that works right I can lead them like a puppy on a leash," he says. When asked how the technique works, Wallace replies, "Trade secret."

After capture, Wallace humanely kills the animal then removes the skunk essence from the gland with a hypodermic needle and ships it to a buyer, usually receiving about $10 an ounce. A minute amount of this vile-smelling fluid is used as a "booster" in many colognes and perfumes, as well as to produce liquid animal-trapping lures. Wallace also tans and sells the skunk pelt.

The list of wildlife species that cause nuisance problems is a long one. Badgers, ground squirrels, and pocket gophers dig holes in pastures and yards. Woodpeckers knock holes in siding. Coyotes enter subdivisions and kill cats and dogs. Raccoons can be dangerous to pets and even humans, especially when the animals become habituated to scavenging garbage, dog food, birdseed, and other edibles left outdoors.

Depending on the species and the situation, Wallace may remove the attractants, cover holes that allow entrance into buildings, or remove the animal by trapping, immobilization (using a tranquilizer in a syringe affixed to the end of a "poke-pole"), or, in rare cases, shooting. When an animal is trapped alive, it is usually killed using lethal injection, drowning, or a carbon dioxide chamber. Most animals are not released elsewhere, because that would likely move the problem to a new location. However, says Wallace, when clients request that an animal be relocated, he tries to comply. After one woman hired him to catch and kill a skunk that was in her house, she held a prayer vigil for the deceased animal.

Wildlife control specialists say their business requires them to understand the public's widely divergent attitudes toward wildlife—and trapping. "I've encountered everything from complete acceptance of my role as a trapper to 'you shouldn't be allowed on the planet,'" says Phil Hettinger, who runs a wildlife control business in the Bozeman area. Some people oppose trapping in principle, even if it is necessary to remove an animal causing a serious problem. But Hettinger, a regional NWCOA director, says that often a little information can soften people's attitudes toward trapping. "Sometimes I get calls from people who really don't want the problem animal killed," he says. "I explain to them that I do lethal control quickly and efficiently, and tell them why. When they think about it, they usually end up wanting whatever it will take for it not to be their problem anymore."

Animal removal specialists point out that people need to take some responsibility for how their actions may invite nuisance wildlife problems. "When you build right on top of an area where animals once roamed freely, you are creating your own conflicts," Wallace says. Hettinger adds that new homes often provide artificial habitat for raccoons, skunks, bats, coyotes, pigeons, marmots, and other wildlife, creating increased opportunities for conflict. "It's not the animal's fault that it finds the new habitats inviting," he says.

Wildlife control is a sorely needed service, but it is not a business for the faint of heart. Removal specialists often deal with distraught homeowners who are angry, scared, or both. And wild critters can be stubborn, unpredictable, and often dangerous. Wallace has been bitten by muskrats and foxes, charged and scratched, and even sprayed in the mouth by a skunk not about to be "tickled" into submission. "I stay current on my tetanus and rabies vaccinations," he says.

For more information on dealing with nuisance wildlife, visit the FWP website at fwp.mt.gov and look under "Wild Things" and then "Living with Wildlife." The department has produced guides for 21 different species of game and nongame animals. Check the yellow pages for professional nuisance trappers in your region.

John Fraley coordinates FWP's northwestern region Information and Education Program in Kalispell.

CRITTER RIDDERS Clockwise from top: Dave Wallace of Kalispell sets an underwater beaver trap; bats in an attic roof; a raccoon caught in a live trap; a chimney cap installed to prevent bats and birds from entering. "If you can solve the problem without touching the animal, so much the better," says one wildlife removal specialist.

NEXT TIME

BY JOHN BARSNESS

ILLUSTRATIONS BY NORA WHEDGEN

STREAMS USUALLY CUT A DEEP HOLE JUST BELOW BRIDGES. Abutments are spaced to accommodate normal water levels; during floods the widened current accelerates through the gap and carves away at the streambed. The hole on the downstream side of this one-lane wooden bridge, even in low August water, was "deep enough to float your hat," as an old ranch hand I worked with used to say. There was no railing, and I leaned out the open window of the pickup and looked directly down into the deep water, thanking whoever makes trout streams it was not gin clear.

The pool was a translucent green, the color of a trillion phytoplankton yearning to breathe free. I reached into the ashtray for a new penny and dropped it into the pool, risking arrest for heavy-metals pollution. It disappeared a couple of feet below the surface. As it disappeared a fish tried for it, a green-silver curve deep in the water.

"How's it look?" Eileen asked, from the other side of the cab.

I turned and looked past her, upstream, where the shadows of cottonwood trees leaned across the water. The evening light between our bridge

-IV-
WILDGEN

and the cottonwoods was filled with caddis flies, appearing white as they flew through the sun against the shadows, vibrating like a quick galaxy. "It looks good," I said. A blue heron took off, unfolding out of the shadows and heading upstream, made nervous by our stopping. Eileen pointed. "Too bad he left," I said. "I was going to ask how the fishing was."

The home place was a half-mile back, a two-story white frame house at the end of a gravel road bordered by more cottonwoods. The rancher had just sat down to eat, he said, otherwise he would have shown us where to fish, a half-mile downstream. "It's too thick by the bridge," he explained. "Lots of trees and willows. Not many folks fish there."

"That's okay," I said. "We'll take our chances." We thanked him, and he said if we were to come by again, just go ahead and fish, don't even ask. He'd know our outfit.

There was a place to pull off just on the other side of the bridge, a barbed wire gate leading into a hay field. We sat on the tailgate and pulled on hip boots, then walked along the edge of the field to the cottonwoods, Eileen carrying the rod. Near the trees a whitetail buck jumped up from the tall grass, summer antlers full grown and thickened with velvet, as brick red as the rest of his body, and stood for one terrorized instant before running upstream through the trees, high tail visible like a firefly even after his body disappeared in shadow. We stood and watched, then walked through low rose bushes under the trees to the edge of the stream. Both upstream and down from the cottonwoods we could see willows lining the bank, but the tall trees shaded out everything underneath them except the roses. Everywhere was the taste of late summer, heat and dust and the sweet-raw taste of willows and hay in our mouths.

A gravel bar angled across from the far shore, curving into the bank below us. On the far side the water looked deeper, and as we stood and looked I saw a trout rise in the bubbles below the bar.

"There's your trout," I said. That summer she had decided to learn to fly fish as the water dropped and I started catching more trout on dry flies than she did on spinners. I pointed with my rod. "Over there, in the deep water."

She shaded her eyes and looked. "I can't see it."

"It looks like the bubbles, except slower." I watched and saw the same trout come up, and then another, farther downstream. "There's one below him now, in the slick water."

"I see that one. Are they eating those flies?" She pointed at the caddis in the air.

I shook my head. "They're rising too slow. Those are all in the air, anyway, not the water." I watched the trout rise again. "They probably eat anything that comes floating along." I squatted down and sat back on the edge of the bank, then eased my legs into the river, onto the firm gravel. Suddenly my feet felt pleasantly cool, and the shadows seemed cooler too, as if the riverbed held two rivers, one of water and one of cool air flowing just above the water. I turned and held her hand as she eased into the water, then started across, angling up the gravel bar, the water less than shin-deep. In the middle of the river I looked upstream. The water quickened again above the pool in front of us, but beyond I could see the current slowing into another pool.

We shuffled our feet slowly under the surface, moving within a short cast of where the lower trout rose. She whispered, as if we were stalking the whitetail buck. "Is the fly on my line okay?"

"You don't have to whisper," I said. "Just don't splash." She looked at me, frowning. She likes to get close to anything wild. She likes to fool all their senses, and was extremely disappointed to find wild turkeys can't smell. "Let me see it," I said. It was a small, sparse Elkhair Caddis that had been on the leader for a week now, since I'd last used the rod. I took a plastic container of line grease from my vest pocket and worked a little into the hair and hackle. It was an old fly, made before I had started crushing every barb in the vise before I tied a fly, so I flattened the barb with the needle-nose pliers from my vest.

"Okay," I said, letting the fly go. "Catch him."

She pulled some line from the reel and began false-casting, a little too fast.

"Wait on the backcast," I said. We'd gone through this all week, on the lawn.

She nodded, and did better. When she had enough line out she cast, the line landing in a snaking curve four feet below the fish. Her lips tightened and she breathed hard through her nose.

"That's okay," I said. "It's better if it isn't straight. Just let out a little more line and do the same thing again."

So she did, dropping two coils of line right on top of the trout's last rise.

"That's a little too much," I said. "He won't come up for a while now."

She shook her head, stripping in line. The coils caught one another and the line came up in a tangle. I held the rod while she picked at it. "You warned me," she said.

"About what?"

"About having to learn a whole new set of tangles."

Writer and editor John Barsness lives with his wife, Eileen Clarke, in Townsend. Nora Wildgen is an environmental artist in Minneapolis. This essay is from Montana Time *by John Barsness* © 1992. *Used by permission of The Lyons Press, lyonspress.com.*

He jumped three more times, twice in the downstream shadows, then the last time upstream in the sunlight, so bright he almost hurt my eyes.

"You remember. You always say there are too many things to remember."

"This is real—" She held up the tangled line. "None of that 'accelerate the cast' stuff." She smiled, looking up, the line finally untangled. "Now what?"

"The other's still rising, up in the bubbles."

She looked, bent forward like a heron. "Now I see him. When he comes up. It's like a longer, slower bubble."

I nodded. "Try to put it in the fast water at the edge of the rocks. Then let it float into the bubbles. He'll find it."

She nodded, very serious, and bent forward again when she let the line go. The fly landed perfectly at the base of the gravel bar. I lost it in the shadows but watched the yellow line. The trout curved up in the bubbles beyond the tip.

"He just took it."

She shook her head.

"Yes, he did. I saw him. Right beyond your line."

"Then he didn't eat the fly. I never felt a thing."

"You don't feel them. You watch, then raise the rod."

"You never told me that part!"

"Well, it's obvious. Look at the slack in the line. You have to raise the rod to hook the fish."

"I never had to before."

"With lures you always have a tight line. With flies, you have to strike as soon as they take the fly. Otherwise they let it go."

"You mean they spit it out."

I winced. "You've seen a trout's mouth. They don't have spitting gear."

"That's not what Milo told me, that time we went fishing up Rock Creek. He said the trout spit my lure out."

"It's just something people say. Besides, you know Milo."

"Yes, and you know everything, but you don't tell me to raise the rod when the fish eats my fly."

I rolled my eyes. "Okay, okay. I thought you'd watched me enough to know."

She didn't say anything, just started casting again. She false-cast for a while, drying the fly, remembering that, and then let the line go. The sun had moved over the head of the pool, and I could see the fly floating between the bubbles, looking very phony. And then the trout took it, coming up in a curve so slow I could see his dorsal. "He—" I started to say, but the trout was already in the air.

"I got him!" she shouted. The trout jumped again, downstream, a rainbow bigger than I expected.

"Yes, you did."

She laughed. "What do I do?"

"The same thing you do with a lure. Let him go until he's tired. Let him have a little line if you think he's pulling too hard."

He jumped three more times, twice in the downstream shadows, then the last time upstream in the sunlight, so bright he almost hurt my eyes. After that he stayed underwater. She kept the rod up and when the trout began to tire I unhooked the net from the back of my vest and knelt down, feeling gravel and cool water under my knee, through the waders. "Back up and lead him over it," I said.

She held the rod up with both hands and waded backward, standing behind me, and the trout came up and slid over the black water and then over the aluminum rim. When I lifted the net he felt too heavy, like an aspirin bottle full of lead shot. I reached down and twisted the tiny fly out of his mouth, then held the net in the water, letting him breathe.

She squatted beside me, very elegant in jeans and hip boots, and looked at her trout. He had an olive back and a pale wash of pink over his gill covers and flanks, as if someone had painted a new chrome bumper with diluted nail polish. She shook her head. "Let me let him go," she said. I handed her the net. "He's heavy," she said, looking at me. I nodded. Then she tipped the net up and he went.

We straightened and looked upstream, at the bottom of the next pool. "Your turn," she said, and handed me the rod. I looked at her. "Thanks," she said. "Sorry I got mad."

I shrugged. "I've done it so long, I forget what I have to tell you."

She nodded. We walked up the gravel bar to the bottom of the next pool. The cottonwoods ended and there was a long stretch of undercut grassy bank above deep water. We stood and watched, but no trout came up.

"There has to be one in there," she said, whispering again.

I nodded. "Probably, if there are rainbows like you caught so close to

the road." I took a small box from one of the bottom pockets of my vest and found a deer-hair grasshopper pattern. I bit off the light tippet and tied the 'hopper onto the heavier leader, curling up the tippet and Elkhair Caddis and putting them in the box. Then I greased the 'hopper up like an English Channel swimmer.

The undercut was all in shadow and I first cast down at the tail, in six inches of water. At dusk you never know. Nothing happened, so I took a step upstream and cast again. By the time we'd reached the middle of the cut bank I had the range just right and was tossing the 'hopper into the loose overhanging grass about half the time, pulling it out to drop along the edge of the bank.

Then the water bulged up under the fly like the surface of a Florida pond when a sunken alligator decides to leave, and I jerked my rod hand slightly, involuntarily, and then stopped it voluntarily, because I could still see the fly. The slight jerk pulled the fly toward us, sinking it. Then it bobbed up again, and the trout hit it, head coming out of the water like a small 'gator. The rod was already halfway up from my involuntary jerk and the fish hooked itself when it turned back toward the cut bank, water flying. I leaned the rod sideways trying to keep the fish out of the shadows, and the trout rolled on the surface.

"Brown," somebody said, and I realized it was me.

"Catch him," Eileen said. "Catch that sonofabitch." She gets like that, the city Irish kid who finally learned to fish. She would have been a good poacher, back in County Mayo, having that hard need to possess wild things, no matter what the cost.

The heavy tippet held and the trout held in the deeper water below the bank, bending the rod rhythmically in the slow cadence of a bass drum. I'd seen other big brown trout fighting the hook and could imagine his length bending, like a muscular hinge, as he tossed his head.

When that didn't do him any good he turned and headed downstream through the shallow riffle, sucking the slack line through my fingers until it all disappeared and the reel whirred. I stuck my left hand inside the reel and touched the hard-wound line to slow the spool. He made it over the lip of the bar and I followed, walking fast through the shallow water, not caring if I splashed now, feeling the trout tossing his head again as I wound line back onto the reel. I held the rod high, standing above him at the edge of the pool, feeling sweat on my forehead, suddenly cool in the evening. Then he stopped bending, holding steady in the stream. When I leaned back he came toward me, then ran across-stream, still strong but not uncontrollable, and I knew I had him.

Eileen knew it too. "Let me take the net," she said, standing behind me.

"I don't know if he'll fit." I pumped the rod now, dropping it as I reeled, then lifting again, and he came halfway across the pool, then ran again, not as strong.

She took the net anyway, unhooking it from my back, and by then I could see him, turning in the dark water. He was lean, not belly-heavy like the rainbow, lower jaw hooked like an osprey's. When I leaned back to try to move him toward the net he came and then turned again. Then I said the hell with it, I'd either break him off or land him, and brought him up and over the net, at the edge of the bar, and Eileen lifted.

His head hung just under the aluminum frame, but his tail stuck up above the other side. He was the color of the gravel under our feet, an old bronze, with red spots broken up by his scales. I breathed out and thought about killing him. He'd taste fine, cut into steaks and broiled with some butter and garlic and basil. Then I twisted the grasshopper out of the bone of his jaw and said, "Let's get him into the water."

We both knelt again, in the same place we'd knelt to release Eileen's trout. She dipped the net and I held the trout, both my hands under his lean belly, weightless in the current. His gill covers worked and he breathed among the bubbles.

"There's lots of air in that water," I said. Eileen nodded. "Sometimes I wonder," I said, holding the trout.

"Wonder about what?"

"Wonder about making trout swim up and down streams until they almost kill themselves."

She nodded again.

The trout moved in my hands. I took my upstream hand away, holding him gently by the wrist of his tail. Then he swam away, blending in a slow cadence, the same color as the new penny I dropped over the edge of the bridge.

"Next time, trout," I said. "Next time, I'll eat you."

Burbot

(Lota lota)

By Tom Dickson

The burbot is unlike any other fish in Montana—or the world, for that matter. Also known as ling, it is the only freshwater member of the cod family and is closely related to Atlantic cod, haddock, and pollock. Some biologists speculate that the burbot was once a saltwater cod before becoming landlocked millions of years ago during a continental shift or flood. If that sounds farfetched, consider this: The burbot is the only freshwater fish to spawn in midwinter—and at the exact time saltwater cod spawn.

Appearance The burbot looks something like a cross between an eel and a catfish. It is marked by a single barbel on its chin (the fish's name comes from *barba*, the Latin word for "beard"). The slender fish has tiny, imbedded scales that give it a smooth feel. The body is cream or pale green with dark brown or olive green mottling. Slow for a fish, the burbot uses its camouflage to hide from minnows and other small species. When they swim close enough, it grabs them with its massive mouth, which is lined with several rows of tiny teeth. The burbot has a disturbing habit of wrapping its body around an angler's arm like an eel.

Tom Dickson is editor of Montana Outdoors.

Range Burbot are primarily a fish of northern waters, including those of northern Europe. They are found in clean, large rivers and deep, cold lakes. In Montana, burbot inhabit the Missouri, Big Hole, Beaverhead, Ruby, Madison, Yellowstone, Milk, Poplar, Bighorn, lower Clark Fork, and lower North Fork of the Flathead rivers.

Reproduction Witnessed only by a handful of biologists and ice anglers, the burbot's spawning ritual is nearly mythical. In early February, the fish move from the depths of rivers and reservoirs to shallows over mud flats or sandy shoals under the ice. The fish then congregate in a living glob of up to a hundred or more intertwined bodies that move in and out of the quivering sphere, releasing eggs and spawn.

The great North Woods author and naturalist Sigurd E. Olson once witnessed the spectacle through a large ice hole and described it as "a struggling, squirming mass of fish, the long brownish snaky bodies twisting around each other, the entire contorted mass turning over and over, beating the water to a foam."

Feeding Burbot are voracious predators that will eat about anything they can find—primarily fish but also frogs, snakes, and even baby swallows that fall into the water. Their tendency to bite lures and bait makes burbot easy to catch. The fish are most active at night, and anglers do best using a minnow-tipped jig. In addition to their catchability, burbot are great to eat. The meat is dense, flaky, white, and free of bones (though it becomes rubbery and inedible after being frozen and thawed). Like that of cod, the burbot's liver is rich in vitamins A and D. French connoisseurs prize the *foie de lotte de rivière* (liver of river cod) poached in white wine.

Management A native Montana fish, the burbot may be declining in number from overharvest as well as dams, which restrict river migration. Recent studies of burbot on the Missouri River show a distribution similar to that of rainbow and brown trout. Burbot numbers are highest near Holter Dam, progressively declining downstream. On the lower Yellowstone River and its tributaries, FWP biologist Matt Jaeger is in the last year of a four-year study that tracks burbot to see where the fish go during different times of the year. This baseline information will help biologists in the future better understand how factors such as water temperature and river flow affect burbot movement and populations.

TAIL WATER FISHERY

Photographer Jason Savage of Helena was driving along the Missouri River last summer when he spotted an angler and two curious onlookers. "That scene with the guy, the horses, and Holter Dam in the background really said 'Montana' to me," says Savage. For additional perspectives on trout fishing, see our photo essay on page 24.

ASSOCIATION FOR CONSERVATION INFORMATION
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